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REPORT ON UNDERSTANDING NEW MEDIA.

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DESCRIPTORS- *MASS MEDIA, *MEDIA TECHNOLOGY, *SENSORY EXPERIENCE, *SOCIAL CHANGE, *LANGUAGE PATTERNS, CULTURAL FACTORS, LEARNING, EXPERIMENTS,

IN TYPICAL MCLUHAN STYLE, THE AUTHOR OF THIS WORKING PAPER TRACES HISTORICAL-CULTURAL TRANSITIONS FROM PHONETIC ALPHABET TECHNOLOGY TO MEDIA OF THE NEW ELECTRONIC TECHNOLOGY. THESE MEDIA ARE VIEWED AS EXTENSIONS OF MAN'S SENSES, AND AS LANGUAGES THEMSELVES, WHOSE ONLY CONTENT ARE OTHER MEDIA. EACH MEDIUM (E.G. SPEECH, WRITING, PRINT, PHOTOGRAPHY, THE PRESS, RADIO, TELEVISION, FILM, PHONOGRAPH) IS DISCUSSED IN TEXT, AND IN THOUGHT-PROVOKING QUESTIONS, IN ANNOTATED BIBLIOGRAPHIES, AND IS REPRESENTED ON A CHART IN TERMS OF "HIGH" OR "LOW DEFINITION", MCLUHAN'S TERMS FOR HUMAN SENSORY RESPONSE TO MEDIA. ALSO REPORTED IN THIS PAPER IS AN EXPERIMENT DESIGNED TO COMPARE EFFECTS OF RADIO, TELEVISION, SPEECH, AND PRINT ON LEARNING. THE SAME FACTUAL MATERIAL (DUPLICATED IN THIS DOCUMENT) WAS PRESENTED IN EACH MEDIUM TO ABOUT 100 COLLEGE UNDERGRADUATES, WHO WERE FULLY INFORMED OF THE EXPERIMENT AND ITS OBJECTIVES PRIOR TO THEIR PARTICIPATION IN IT. ANALYSIS OF VARIANCE OF THE EXPERIMENTAL GROUPS, WHICH WERE HOMOGENEOUS FOR INTELLIGENCE, SHOWED SIGNIFICANT DIFFERENCES IN LEARNING, BOTH IMMEDIATE, AND AFTER EIGHT MONTHS, WITH TELEVISION MOST EFFECTIVE, THEN RADIO, THEN PRINT. CAUTION IN INTERPRETING AND GENERALIZING THESE RESULTS IS URGED. (LH)

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**PROJECT IN
UNDERSTANDING NEW MEDIA**
96 ST. JOSEPH STREET
TORONTO 5 ONTARIO

**REPORT ON
UNDERSTANDING NEW MEDIA**

June 30th, 1960

FROM

BARBARA ECKHART

**U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION**

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The Introduction to the Syllabus and
Media Log I and II were mailed out to
various people, early in the project,
to elicit criticism and suggestion.

PREFACE

My discussion here concerns the resolving of the two kinds of research in terms of the phonetic and numerical, i.e. between Euclidean and non-Euclidean space.

Von Békésy is exceptional among scientific researchers in understanding the diversity of these methods. (see photocopies ff.)

My own work has had to follow the mosaic pattern, while keeping in mind the scope and relevance of the perspective pattern.

In his book on Number The Language of Science, Tobias Dantzig faces the same conflict of method and approach in quite different terms. (pp.130ff) Dantzig refers to the task of modern mathematics as having been the translation of natural, rational, Euclidean space into our other senses. Euclidean space is the product in our Western experience of the phonetic alphabet. As a mathematician, Dantzig does not know this but that in no way invalidates his report that Number The Language of Science is a technique for translating a visual experience into the non-visual.

The alphabet, on the other hand, is by definition a technique for translating sound and the other senses into visual terms. In his book The Sacred and the Profane, Mircea Eliade reports in detail how neither time nor space have continuity or homogeneity for pre-literate societies. Only after the translation of pre-literate experience into visual phonetic alphabetic terms does there occur in human experience the concept or awareness of uniformity, continuity, and homogeneity in time and space.

The discovery that such characteristic of experience are fictions which proceed from phonetic alphabet technology is one

of the dominant concerns of the present report. Since the Western world has been created by alphabetic technology, with its various extensions through print and paper, it becomes necessary to-day to understand the alphabetic medium as well as the print medium if we are to exercise any responsibility toward our existing educational, political, and legal establishments in the Western world.

For the electronic technology has nothing in common with the alphabetic and is not merely a way of restoring pre-literate awareness to the twentieth century man. The electronic technology as much brainwashes literate man.

This raises another dominant concern of the present report on understanding media. Western man is an easy victim of the new technology, when he slips into the habit of appraising media situations in terms of their "content". Let it be said at once that content is a natural illusion and fallacy of the alphabetic technology. Since the alphabet is a visual code for speech, there is always the illusion in the written form that speech is "contained" in the visual code. Speech is not contained in the visual code, but is parallel. And the relation between the two media of speech and visual code are utterly different under manuscript and under print conditions.

The illusion that visual code "contains" anything extends to many areas of Western visual experience, pictorial, or Euclidean or visual space. The painters and mathematicians were the first to penetrate this illusion. Since Cezanne, perspective or fixed point of view and vanishing point are no longer taken for granted

in visual organization. In Art and Illusion, E. H. Gombrich

says: "When Bernard Berenson wrote his brilliant essay on the Florentine painters, which came out in 1896, he formulated his aesthetic creed in terms of Hildebrand's analysis. With his gift for the pregnant phrase, he summed up almost the whole of the sculptor's somewhat turgid book in the sentence, 'The painter can accomplish his task only by giving tactile values to retinal impressions'".

The mathematician by comparison with the painter had long before substituted structure for content. Sir Arthur Eddington, in his New Pathways in Science (Cambridge University Press 1935) makes a statement of relevance to those who are trying to understand why "the medium is the message":

"Out of the unknown activities of unknown agents mathematical numbers emerge. The processes of the external world cannot be described in terms of familiar images; whether we describe them by words or by symbols their intrinsic nature remains unknown. But they are the vehicle of a scheme of relationship which can be described by numbers, and so give rise to those numerical measures (pointer-readings) which are the data from which all knowledge of the external universe is inferred.

"Our account of the external world (when purged of the inventions of the story teller in consciousness) must necessarily be a "jabberwocky" of unknowable actors executing unknowable actions. How in these conditions can we arrive at any knowledge at all? We must seek a knowledge which is neither of actors nor of actions, but of which the actors and actions are a vehicle. The knowledge we can acquire is knowledge of a structure or pattern contained in the actions. I think that the artist may partly understand what I mean". (p.256)

The reason why the mathematician has no illusion of "content" is quite simply that his own discipline has for so long been an instrument for translating one "content" into another that he cannot share the outlook of a man for whom "content" and point of view are unquestioned postulates of experience. But to-day even information theory and game theory theoreticians have fallen into the "content" fallacy with consequent frustration of their

endeavours. The information theory people who deal with communication channels as "encoding" or "containing" devices have quite naturally come up against a wall of contradictions. For the encoding technology, be it telephone or radio, is as much as the phonetic alphabet a medium with its own language and bias for perception. The game theory experts, after a promising start, bogged down in their failure to understand that game is a medium or a language by itself which needs to be understood on its own terms.

The Scientific American for June, 1960, features LOGLAN: "This logical language is now being synthesized on modern linguistic principles, largely to examine the hypothesis that the world view of the members of a culture is determined by the structure of their language".

A glance at Von Békésy reveals how sternly our pictorial perspective approach in the sciences repels the pluralistic mosaic approach and yet in our electronic technology we have to live by the mosaic pluralistic and nuclear pattern--even while our thoughts and methods move on the rigid rails of perspective convergence and vanishing point. That LOGLAN should have reached a phase of scientific popularization is an indication of where we stand.

The present report deals with the major media as languages in the full structural sense. That is, any medium based on any of our senses has the power of imposing its own assumptions.

Two generations ago a respected art critic showed that the function of painting was to translate the visual into the tactual. This critic, Bernard Berenson, was working with his

eyes on the theories of the sculptor Hildebrand. Berenson had begun to say exactly the same things as the mathematicians, like Dantzig, were saying.

What Dantzig is saying in a book like Number is that in the Western world there have been two parallel and contradictory languages for thousands of years. The language of number and science, on one hand; the language of the alphabet and culture, on the other. The language of the alphabet was the technology by which man translated himself out of auditory tribal space into the linear rational Euclidean world "where nothing takes place but what is straight, flat and uniform. Columbus and his contemporaries, by accepting the uniform lineal space of the new age of print, pushed on into the discovery of a round earth. Exactly the same situation has resulted in the discovery of nuclear phenomena in the subatomic dimension (Joyce formulated this paradoxical situation as "Gutenmorg" with his cromagnon charter" (p.20 line 5 of Finnegans Wake)).

It is only in our present century that we have had sufficient speed and simultaneity of access to large bodies of collective cultural data to enable us to understand the dynamics of change and cultural translation. Dantzig, for example states (p.141) "The attempt to apply rational arithmetic to a problem in geometry resulted in the first crisis in the history of mathematics".

In a word, the attempt at the translation of one mode into another created the crisis. The birth of linear and rational space "where nothing takes place but what is straight, flat and uniform" was one of the consequences of applying the phonetic

alphabet to our translation of pre-literate experience. The pressing challenge and need to translate linear rational space back into its pre-literate modes was met by the infinitesimal calculus which acted as a bridge between the Euclidean and non-Euclidean during recent centuries.

The principal of translation so characteristic of all media problems is mentioned by Dantzig (Number p.89) in tracing the analogy between the history of algebra and that of arithmetic: "The symbol has a meaning which transcends the object symbolized; and that is why it is not a mere formality."

"In the second place the letter (in algebra) is susceptible of operations which enables one to transform literal expressions and thus to paraphrase any statement into a number of equivalent forms. It is this power of transformation that lifts algebra above the level of a convenient shorthand."

The mathematical recognition of the transforming and translating character of various media of notation enabled mathematics to move faster and more securely through its problems. But the greatest tool which the mathematician had to work with in recent centuries, for the purpose of translating one space into another, is the process of infinity or of repetition toward a convergence on zero which is an accidental derivative of the printing press. The basic character of print as uniform and repeatable to infinity had consequences in mathematics as well as in literature. As Dantzig states (Number p.77) "And yet the concept of infinity, though not imposed upon us either by logic or by experience, is a mathematical necessity. What is, then, behind this power of the

mind to conceive the indefinite repetition of an act when this act is once possible? To this question I shall return again and again throughout this study".

Again, on p.139, Dantzig says: "Banish the infinite process, and mathematics pure and applied is reduced to the state in which it was known to the pre-Pythagoreans".

It is very clear from Dantzig's developmental study of mathematical technique that the tremendous new stress on infinite process after printing provided both the means and the incentive to translate all kinds of spaces into one another. Print did this encyclopedically mainly by translating every kind of culture into itself, but it also created the means and incentive to recover the quality and experience of pre-literate human experience and pre-Pythagorean mathematics. It was incidental to this reconquest of the primitive that Western man invaded the domain of nuclear spaces. The technological means of translating our flat lineal world of rational space into the multiple modes of touch and sound--this was done by electronic technology which by-passes our age-old alphabetic technology.

Whenever man has suddenly attempted the translation of one kind of experience into another kind of experience, a human crisis has occurred. On p.171 of Number Dantzig notices "the genesis of the conflict between geometrical intuition, from which our physical concepts derive and the logic of arithmetic. The harmony of the universe knows only one musical form--the legato: while the symphony of number knows only its opposite--the staccato".

Preface - 8

Speech itself is a staccato stutter which may well have been preceded by a human technology of legato gesture. It is characteristic of our time that we readily investigate such concepts simply because we can now, in an electronic age, cope with all levels and aspects of a situation as simultaneous rather than as sequential. We now are compelled to have the sophistication of a Georg Von Bekesy able to entertain a plurality of scientific modes of investigation.

In a multi-media world it is quite unthinkable that we can have a uni-lateral culture or science. We are in great danger at the present of sacrificing the whole of our Western culture with its unconscious bias based on alphabet and printing. It is only by understanding the operation of media in the swift making and unmaking of cultures that we can hope to sustain the properties uniquely valuable in each medium. Our notion of "content" renders us quite helpless in defining or defending the role and value of the audible as compared to the visible. We shall appear to posterity as very pathetic guardians of traditionally achieved values when we speak of preserving the "content" of this or that culture. This subliminal automatism of mental gesture on our part does not even permit the defense of the technology of literacy from which unwittingly we derive the notion of "content".

The entire unity of Western culture may perhaps be conceived as an extended parallel between the operation of mathematics and of alphabet in reverse directions, as it were. To-day the

reverse antagonism ends with the computer assuming the task of automatic translation of one space language into another, and thus making all spaces simultaneously available much in the manner of a Unesco session. Having during many centuries been braced to sustain the struggle between the technology of the alphabet and the technology of number we now find ourselves floundering when this entire strain passes from the human to the mechanical domain. Many parallels occur in other media as in literature when confronted with movie, radio, and television. Perhaps the most frequently noted area of distress is that which concerns the relation of "The Individual in a Mass Culture". George Gerbner in the June 18, 1960, issue of the Saturday Review has a fine essay on this problem which it seems to me he states in moral terms, rather than in terms of technical understanding of what is happening. The individual does not exist in a pre-literate world. It may be quite impossible to retain him in a post-literate world. This seems not to be a moral question, but one of existence itself. Kept on a moral plane the issue is likely to be debated until there is no individual or society. Put on a technical plane, the problem is to ascertain the role of various technologies in the emergence of the individual from the tribe and to act accordingly.

Radio, as discussed in this report is a mighty anti-individual force recreating all the conditions of tribal awareness. If our highly literate individualism compels us to discuss the role of radio until radio has abolished us, then it is only true to say

that radio hath eliminated the phonetic alphabet. It would be desirable to say that before this had happened a jury of trained minds, fully cognizant of the operation of radio in the brain-washing of other media, voted to permit radio its unqualified triumph over the visual faculty, in the organization of all human concerns. I do not think that there is the slightest indication of any human wish to achieve this sort of detachment. Even where the possibility of such detachment is easy of realization, many considerations crudely designated as vested interests induce men to turn away from the understanding of media.

In my personal experience, I found it quite easy this year to communicate the most difficult points about media to Grade XI students in a few hours. It would have been quite impossible to get the same matters across at the adult level.

INTRODUCTION TO SPEECH

"Speak that I may see you".

"Let us draw nearer to the fire and see what we are saying".

"Man is distinguished from the brute by the power of speech".

Speech, as a medium which employs all the senses at once in harmonic ratios, as it were, draws attention to the ambition of Richard Wagner, the composer, to produce a new art form which would orchestrate all of the arts in a single experience.

What is happening in the electronic age may seem contradictory. On the one hand there is an extension of each of our senses which amounts to the externalization of our sensorium. On the other hand there is the unified field of experience and multi-media created by the mere fact that the electronic is simultaneous no matter how many modalities or senses or media are in play.

Not only are the individual media "languages" in the sense that they are syntactic patternings of experience, but the electronic dimension forces upon our attention the need to harmonize the various media in the way in which the many forms of human speech harmonize our various senses.

Edward T. Hall, in The Silent Language (Doubleday 1959) is concerned with working out a grammar capable of providing tools for analysis of any cultural situation. As an anthropologist he approaches cultures as silent languages. But the student of media will quickly discern how to adapt his tools of analysis to media study. So far as the present approach to the understanding of media is concerned, the whole of The Silent Language is relevant.

Introduction to Speech - 2

Hall's concept of "the organizing pattern" concerns the fact that "there is no such thing as 'experience' in the abstract, as a mode separate and distinct from culture". Hall is saying here, in effect, what I formulate as "the medium is the message". I think he could well do with some study of the ways in which the dominant technology of any culture simply repeat themselves in the variety of matters offered by our senses, individual and collective.

Since speech is itself a master technology, it goes without saying that the Sapir, Whorf, Hall, Trager, Lee axis have long followed this line of study. Not being perhaps particularly familiar with the types of cultural analysis directed by the artists of this century toward human technologies as art forms, the social scientists have been unduly shy of a plenary art approach to technology.

In The Books at the Wake, by James Fatherton (Faber 1960) it is mentioned Finnegans Wake is a history of writing. "We begin with writing on a bone, a pebble, a ramskin...leave them to cook in the muttering pot: and Gutenberg with his cromagnon charter..."

The problem for the artists in our time is to say everything at once, and this is the problem in a variety of ways for every kind of person in an electronic age.

In these few words from Finnegans Wake, Joyce is saying, amongst other things, that the dawn of human culture (Gutenberg) is a cromagnon (or primitive affair) but also Gutenberg the dawn of the Renaissance accelerated our rediscovery of the cromagnon

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beginnings of human culture. Letters, the language of culture, when given the new stress of print, hastened our rediscovery by historical analysis of the pre-literate cromagnon world. Letters translated us out of the all-at-once auditory and tactile world of pre-literate man, while Numbers The Language of Science (Tobias Dantzig Anchor Books No. 67) developed parallel with letters as a means of translating the visual and the literate back into the non-visual and the tactile.

The artist faces the problem of responding to this type of awareness with new forms of relevance for mankind. Pre-literate society enthroned the artist as medicine man. Post-literate society (the electronic) must enthrone the artist as navigator.

Since the purpose of writing was to translate a non-visual multi-sensuous world into a picture or visible world, it is not strange that we should be confused to-day. For electronic technology does not merely translate the pictorial back into the audible and the tactile; it also presents all of the senses directly and without translation of any sort.

PROJECTS AND QUESTION - SPEECH

1. Devise ways of detecting the sense bias in languages and cultures.
2. Do highly literate people have a different way of utterance and expression from pre-literate and semi-literate people?
3. Consider the problems of speech in those whom some sense is defective. The deaf, the blind, etc.
4. Speech as organized stutter is based on time. What does speech do to space?
5. If speech is organized stutter, is stutter disorganized speech?
6. Devise ways of checking from one language to another the dominant senses stressed in the utterance of those tongues and the natural accompanying gestures of body and face.

READINGS AND SUGGESTIONS - SPEECH

The Silent Language, Edward T. Hall (Doubleday 1959)

Numbers the Language of Science, Tobias Dantzig
(Anchor Books No. 67)

The ancient Oracles at Delphi and elsewhere were said to have had elaborate communications systems. By the time their royal clients arrived at the shrine, a fairly complete idea of the clients' problems had been received.

What was the advantage to all concerned of dealing with the clients' problems in a cryptic way? Why do oral societies rely so heavily on aphorism? (See The Meaning of the Middle Ages by Huizinga)

Why should interpersonal dialogue be considered most nearly adequate to the highest modes of the learning process? Why should the study of speech reach new planes of clairvoyance in the age of the tape recorder?

Experiments in Hearing, Georg Von Békésy (McGraw-Hill 1960)

Sensation and Perception in the History of Experimental Psychology, Edwin G. Boring (D. Appleton-Century Co., N.Y. 1942)

Boring provides clues to the changing attitudes and theories of the Western world toward our various senses.

A phonetically written language will inevitably develop the habit of making words refer to things. A pre-literate language, on the other hand, has no such habit. Word is thing. The work of Dorothy Lee and the work of Bronislaw Malinowski on native speech habits documents this aspect of pre-literate language. A good deal of their material is embodied in "Thinking Through Language" which was prepared by E. S. Carpenter a propos of the

Readings and Suggestions - Speech - 2

media test enclosed in this report.

Almost nothing has been done to study the effect of phonetic writing on our attitudes towards "meaning". In ETC Magazine for winter 1955, Richard Bettering has an essay on "What Phonetic Writing did to Meaning" (p. 111ff) - "What our culture to-day in part is confronted by is the collapse of a 'picture theory' of language".

Scientific American Magazine, essay on LOUHAN's James Cocke Brown, June 1960, Vol. 202, No. 6, pp. 53ff.

"This logical language is now being synthesized on modern linguistic principles, largely to examine the hypothesis that the world view of the members of a culture is determined by the structure of their language.

CHARE INTRODUCTION

Archimedes said: "Give me a place to stand and I will move the earth".

Any manipulator of any medium whatever does have such a place to stand. He takes his stand upon the human sense of eye, or ear, or touch, or taste, or movement, which enables him to move the entire human community.

The chemist Wilhelm Ostwald formulated a theory of color, around the turn of the century, which when applied to media offers many advantages to the observer. Dr. Ostwald's "Colour Equation" is that $C+W+B=1$. "This Equation, in which C, W, or B may assume any value from 0 to 1 is the complete expression for the optical stimulus which gives rise to the colour of every object in our surroundings; C representing the amount of Chromatic, or "Full-Colour" stimulus, W the amount of White stimulus, and B the amount of Black stimulus. The real meaning of the Equation, therefore, is that the amount of stimulus our sensorium is able to receive when we focus our observation on a given surface, under a given illumination, is a constant quantity. The colour of this surface may be pure Black, pure White, purely Chromatic, or it may consist of a mixture of any two, or of all three of these elements; but the total amount of stimulus which implements our Colour Sensation is always the same under the same light, and the same accommodation of the eyes".

Any medium necessarily is constituted by some ratio or proportion among the human senses. All media are necessarily extensions in technological form of one or more of our senses. The electronic

Chart Introduction - 2

media together add up to an externalization of our sensorium. No change in technology can touch us save by altering the existing ratio among our senses. The nature of sensation being itself comprised of a ratio among our various senses, any increase or decrease of intensity in any sense area immediately affects our awareness of the other senses.

To refer this to media terms, I would say that the nature of phonetic writing translating the audible into the visible gave an intensity to retinal impression that caused corresponding diminution of tactile and auditory experience in the life of the scribe and of the man of letters. In fact, when dealing with older media, the folklore of observation so established is far richer than any skill or labour of psychological measurement could make it. I would say this is true of print, but this scarcely excuses the testers from their total omission of study of the effect of print reading upon our senses.

In the following charts, I have layed out the sense factors as they appear to be involved. The principles employed are explained in a verbal essay accompanying each chart. For the most part these charts are psychological hypotheses or arguments affording plateaus for measurement and study. But much of the measurement and study can be done in person-to-person dialogue in any group of students or adults.

Since television, for example, certain new trends have strongly declared themselves in the sense lives of North Americans. Once the hypothesis is presented that there is a direct correlation

Chart Introduction - 3

between the properties of a new medium of communication and our sensory preferences, it is not necessary to tell people what these properties or new preferences may be. They can discover them for themselves. Between "program content" and changing patterns of sensory or experience preference, all the tasters in the world have not been able to establish any correlation whatever. But they are not discouraged. Between the comics and the incidence of crime they continue to strive to establish a correlation. But between the tactile character of the television image and the preference for small cars and paperbacks nobody has tried to discover any relationship.

Would it not be shocking to the man of print culture to be told that the sudden craze for even high-brow paperbacks was directly tied to the tactile character of the television image? Of what avail is moral preference and taste, if the facts of experience do not support them?

SUMMARY

Our media charts have not the result of arbitrary choice, but are concerned with the senses actually involved in a particular medium. These charts are deliberately designed as do-it-yourself kits for teachers and students. Since all of us are involved, daily, with the use of these media, it is quite feasible to sharpen our perception and judgment of them by checking our own experience. The scientific approach to these media has tended so far to be based upon the perception and retention of the supposed "content". This conception, unwittingly borrowed from the nature of the print medium, permits endless, precise quantitative study which has nothing whatever to do with the nature of media.

Speech is the only medium I know of with the possible exception of an open fire which involves all of the senses at once. It would seem that all of the senses tend to be in Low Definition (L-D) (that is, that the Structural Impact (S-I) involves all senses in Low Definition (L-D)) which implies that our response (Subjective Completion (S-C)) involves a high degree of participation of all senses in order to strengthen what is given to us in such an imperfect condition.

Must we regard as a primary aspect of communication the incomplete and the imperfect? If so who is to say how imperfect and incomplete we dare get under the conditions of this or that medium in order to step up the participational response to the utmost?

A NOTE ON S-I, S-C AND L-D, H-D

When we see the advantages of visual charting, they come in the form of a law. This special feature, when any form or structure is related to one or another extreme, it seems to require inverse characterization.

So constant is the operation of this law in the case of various media that as soon as it is known that the S-I (i.e. Structural Impact or Impression) of any medium is in H-D (High Definition) it follows that the S-C (Subjective Completion or response of the perceiver) will be in L-D (Low Definition) also, but not necessarily for the same senses. Thus a High Definition (H-D) auditory image such as radio has a S-C (Subjective Completion) of High Definition (H-D) visual effect. (By High Definition is meant detailed and full volume of information or impression provided to any sense whatever).

When, however, the S-I (Structural Impact) is in L-D (Low Definition) as for telephone, the S-C (Subjective Completion) is non-visual.

It encourages the psychological center to be told these things, even when they are true, because he seems to suppose that it is important to utter high secrets except in technical language.

My associates and I did two major tests of media which had almost significance from the point of view of the psychological center, but no meaning. For example, when we repeated our simulation in High Definition (H-D), having first done it in Low Definition (L-D), we found that radio, a High Definition medium, improved its

A Note on S-I, S-C and L-D, H-D - (2)

position, whereas television, a Low Definition (L-D) medium worsened its position or its level of performance.

According to this chart method, anybody could predict when any given medium will improve or worsen its position or level of performance.

Any High Definition (H-D) medium benefits from additional gimmicks and intensities. But a Low Definition (L-D) medium does not benefit from High Definition (H-D) treatment.

"High Definition" and "Low Definition" are phrases in favour with BBC analysts. I first encountered these phrases in McWhinney's book The Art of Radio (Faber & Faber, 1959) and those terms led me to investigate the point of reversal in shifting from High to Low Definition.

Dick Evans at the University of Houston opines that it would take months for himself or any psychologists to set up adequate tests for my hypothesis. My simul-casts would never have been done at all had it depended upon psychological testers.

HD

Statement...
Dialogue...

All 5 senses
in various
ratios

SENSES

All 5 senses
in various
ratios

Whispering
campaign...
Rumor - Humor...
Organized
stutter as
gesture...

SI

LD

INTRODUCTION TO WRITING

The Greeks made a myth about King Cadmus as he who introduced the phonetic letters to Greece. The myth says King Cadmus sowed the dragons teeth and they sprang up armed men.

H. A. Innis has devoted an entire book to explaining the meaning of this myth. The book is Empire and Communications.

A myth is the explaining of a complex action and reaction in a few words. The phonetic writing permitted the spread of writing on cheap materials like papyrus which could be swiftly transported over land enabling men to organize armies at a distance. In the same way, phonetic writing was able to take over many languages and cultures in the Greco-Roman name. It is a one-way conquest since the other peoples, while being taken over, are quite unable to take over themselves.

Phonetic writing is, above all, a way of translating the audible into the visible. The oral and tangible world of the pre-literate man is translated and made explicitly visual by the phonetic alphabet. This is the traditional distinction between the barbarian and the civilized man. The barbarian plays it by ear. The civilized man plays it by eye. The barbarian lives in the all-at-once world of many directions and many levels of meaning at a single moment. Whereas the literate man lives by the eye, one-thing-at-a-time, one direction at a time, one level at a time. The man of the written word has at command an instrument of organization and of analysis which seems quite mysterious and superhuman to the man of the ear. The movie of the

Introduction to Writing - 2

Bridge over the River Kwai is a full length dramatization of this clash between the man of the eye (the English) and the man of the ear (the Japanese colonel). The practical one-thing-at-a-time men are quite able to make the bridge, but quite unable to control its uses.

The translation of the non-visual world into visual formulas continued educationally, and legally, and politically, throughout the Medieval period with ever-increasing stress on visual system in all levels of organization and knowledge, until the time when Gutenberg gave a new meaning and intensity to this visual stress.

Writing does not occur in Nomadic societies, but only after people have developed the special skills associated with sedentary life. This specialism extends to the sensory life as well, and writing becomes possible when a dissociation occurs among the senses. So-called Euclidean space, i.e. uniform, single-plane, homogeneous space, is unknown until men have learned the art of writing phonetically which is to say the art of translating the non-visual senses into a uniform, spatial language. (See The Sacred and the Profane, by Mircea Eliade, who shows how Euclidean space is unknown to pre-literate man.) Dantzig, throughout his book on Number, holds to the theme that mathematics, especially since the Renaissance, has been characterized by the effort to translate Euclidean space back into the other senses. Especially now with the omnipresence of nuclear spaces resulting from the development of electronic technology we no longer live

Introduction to Writing - 3

in Euclidean space in the West. The new media of communication translate all events into nuclear time and space configurations.

We are in exact antithesis to Euclidean man of 3000 years ago who was totally engaged in translating all of his institutional arrangements from auditory and tactile into visual terms. To-day, after thousands of years of organizing all of our experience in visual terms, a nuclear technology drives us in the direction of organizing even the visual in non-visual forms. The front page of a newspaper appears to the eye, but is organized by telegraph. The newspaper page is thus a nuclear field of events.

In a word, all that Western man has done since writing began he is now reversing. The purpose and challenge of writing cannot be the same, therefore, as when we were engaged in the opposite move of translating man's age-old primitive heritage into visual forms. When Rousseau proclaimed that man is born free, but is everywhere found in chains, he would seem to have been straddling between these two worlds of the primitive and of the nuclear. Because the chains which bind man are the institutional arrangements which he has contrived by means of visual organization and codification of his non-visual life.

PROJECTS AND QUESTIONS - WRITING

1. What would be the problems of introducing the phonetic alphabet to-day into Japan and China?
2. Would the consequence of introducing the phonetic alphabet into China to-day be as drastic as when the Romans introduced the same alphabet to Gaul?
3. Will the ideogram survive in some new roles in the same way as the printed book finds new work to do in the electronic age?
4. What are some of the advantages of the ideogram over our alphabet?
5. Does a form of writing which involves complex situations at a single glance favour cultural continuity and stability?
6. By contrast, does a form of writing that favours attention to one-thing-at-a-time foster instability and change?
7. In other words, is the man of the ear a conservative, and the man of the eye a liberal?
8. Why should writing weaken the human memory? Pre-literate men amazed at the efforts of the white man to write down his thoughts and sayings ask: "why do you write, can you not remember"?
9. Why should a pre-literate people have no concept of words as referring to things, but only of words as being things?

Projects and Questions - Writing - 2

10. Is the "content" of writing the medium of speech? Is it possible for any medium to have a content except it be another medium?
11. Is the medium the message?
12. Is it possible for a mathematical proposition or demonstration to have content?

READINGS AND SUGGESTIONS - WRITING

Empire and Communication, H. A. Innis, Oxford University Press,
(1950)

"The Chinese written character as a medium for poetry, an
Ars Poetica", Ernest Fenollosa, N.Y., Square Dollar Series.

The Hand-Produced Book, David Diringer, Hutchinson's Scientific
Publications (1953)

The Voices of Silence, Andre Malraux

The world of sculpture is poised on the frontiers between
sight and sound, resonating with a vocal quality, but not being
enclosed pictorial space.

The myth of Cadmus directly concerns the first effects of
the invention of phonetic writing. May this also be the case with
the myth of the Gorgon? May one effect of print have been to
turn the mind to stone, even in the moment of imperishably arrest-
ing the moment of thought?

Consider the nature of myth as including simultaneously the
causes and effects of a complex process.

WRITING

In the case of writing by means of phonetic characters men learned how to translate the multi-sensuous thing that is spoken, to bring into one sense only. The peculiar effect of translating the many senses of the spoken word into the visual mode of writing is to abstract one sense from the cluster of the human senses. This simultaneous abstraction and translation of many senses into one sense naturally resulted in a change of ratio among the senses.

It is the advantage of these charts that they enable one to spot readily the components which enter into the experience of any one medium.

One can, then, with equal readiness, spot the omitted senses that remain to be filled in. In the case of writing, all the senses except sight. This is a major reason why the phonetic reader is very strongly introverted. He has so much to fill in. While the written form or manuscript stepped up the visual form of experience to relatively High Definition (H-D), print as technology stepped very much more indeed.

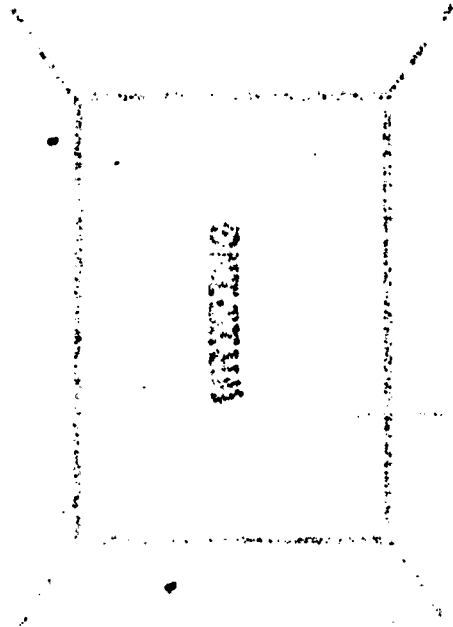
Once more, the advantage of this chart method of study is that once you know what properly applies to any corner of evidence in the chart, it is possible to fill in a good deal that belongs in the other corners. For example, if you know that early movies were visual in Low Definition (L-D), and that later movies were visual in High Definition (H-D), you would already know a great deal about what characterized early and later movies in S-C (Subjective Completion) and L-D (Low Definition).

Some a procedure was followed by scientists working in the discovery of cortisone. They knew in advance enough to eliminate all but 57 possibilities.

These charts offer the possibility of direct participation in research to anybody who has had experience of these forms. Cecil Rhodes in the same way had only to wash the sand off the diamonds in his backyard. Another way of doing direct research on the impact of media is to ask yourself what popular myths and legends which occurred at the time of the new impact might contain relevant material about the social action of these new forms. For example, the myth of Cadmus, and the myth of the Gorgon. For later periods of the modern world it is necessary only to observe the changes which occur in already existing art forms, painting, poetry, music. Thus the new kind of writing represented by Montaigne's Essays or Machiavelli's Prince contain major evidence of the effect of Gutenberg on Western Europe.

Impermeable statements...
 Reading aloud...
 Organisation at distance...
 Individual equality...

Visual...
 Speech...



M/H - Visual Code (contrast Chinese Sculptural
 writing) for speech...

Visual (L-D)...
 Speech (H-D)...

Fantasy...
 Lit. vs Life...
 Cadence myth...
 Decribalization...
 Greco.-Roman
 Conquest of other
 cultures...

INTRODUCTION TO PRINT

Print would appear to be the first mechanization of a hand-craft. A similar technology seems to have been achieved much earlier in Korea, and it is surely no coincidence that the Koreans are the only other people who are known to have developed a phonetic alphabet.

Without the abstraction involved in a phonetic alphabet, the breaking up of the senses necessary for print technology would seem to be impossible. The basis of print technology is the extension of the phonetic alphabet principle from sound to movement. Just as the phonetic alphabet separates sound from meaning, so print separates letters from movement. The motions of the scribal hand are broken up into movable types. Static segmentation of the scribal motion is the base of print technology, leading to the book which is the first teaching machine.

Since Gutenberg, the mechanization of many kinds of motion have been achieved. The principle is always the same. Segmental analysis of the total action involved, and the laying out of this action as a series of static repeatable segments in what we have since called the assembly line. Such assembly line necessarily involves uniform, repetition of a specialist action. As a form of production, it is now ending with the advent of automation.

Automation depends upon an exactly synchronized information flow from electronic tapes, and substitutes the multi-levelled complex for the single-plane assembly line.

In the age of John Gutenberg, people did not understand the kind of revolution that had occurred with printing. Rather, they thought that it was a means of providing ordinary people with

Introduction to Print - 2

instructional materials. The book as the first form of mass production made the identical item available for all men.

As compared with the laborious pace imposed upon the manuscript reader, the reader of the printed page could move as if upon Macadamized surfaces. The narrow and arduous track of learning over-night became a throughway. When information movement undergoes some striking alteration in time, or space pattern, the form of human association and knowledge undergo similar revolution. When print made all knowledge available in uniform and repeatable form, what we call Renaissance individualism and nationalism appeared at once.

To-day, if the only means available to man for self-expression were the forms of commercial advertising, self-expression as an aim or goal for educated man would quickly fade from the picture of our lives. With print it became possible for the first time to dream of self-expression and of earthly fame. Because the exactly repeatable forms of print made possible the extension of the private image and private point of view on an enormous scale. By manuscript means, it is quite futile to dream of publishing oneself to the world, and to-day once more men who must use the great collective forms of movie and broadcasting have very little opportunity for self-expression.

Print made possible individualism because the book as private teaching machine fostered initiative and self-reliance. The book created the ideals of inner self definition and inner goals.

Introduction to Print - 3

the printed page could by its exactly repeatable form open up new markets of the vernacular tongues where before the market had intended to be for Latin books alone. The same repeatability of the printed form made possible totally new aims in education; namely a uniform training for the whole community.

Nationalism was born of this possibility of organizing an entire language area on a uniform political basis. Print became the basis for a kind of national mobilization of manpower. Just as armies depend upon uniformed men acting as replaceable parts in a smooth working military machine. So the uniformly educated citizen body becomes an inexhaustible manpower pool. Napoleon was the first to manipulate the resources of print in this way, mobilizing public opinion on one hand by his press, and manpower by means of the citizen army, on the other hand. Print in this respect afforded to Western man a vast new staple or natural resource which gave to the political power direct access and control over the citizen mind.

If print was the first form of mass production, it was also the first means of providing markets with uniform commodities. Uniform commodities lend themselves quite naturally to uniform pricing. The very idea of uniform pricing was as revolutionary as uniform commodities. Handicraft economies are related to bazaar type markets where prices are the result of much haggling. To-day, under electronic conditions, it is interesting to watch the pressures whether in collective bargaining in motor sales, or in discount houses, which are driving us back to the conditions

Introduction to Part 4

Europe and the oriental despot.

Equally new after print was the discovery of the split between producer and consumer, and also between the ruler and his subjects.

Specialism of function at many levels is characteristic of mechanization. To-day, the reverse is true. Specialism disappears with mechanization. In management and decision-making, people to-day must have a kind of over-all competence in all aspects of an operation. Encyclopaedism and fusion of function is as characteristic of the 20th century as specialism has been previously. In fact, we have come to use the word specialist as a term of dubious praise.

PROJECTS AND QUESTIONS - PRINT

1. Let us try to discover any area of human action or knowledge unaffected by the forms and pressures of print during the past five centuries.
2. If the forms of print have shaped all the levels of action and organization in the Western world up until the advent of nuclear technology, does this explain and justify the type of stress which we allow to our printed forms in educational establishment?
3. If a nuclear technology is now succeeding to the mechanical print technology of the past five centuries, what problems does such a transition present to the educator? To the political establishment? To the legal establishment?
4. What would happen to the society that did not recognize or identify these problems at all?
5. What happened to Medieval education when it failed to understand the nature of print?
6. Consider why anthropology with its pre-literate concerns should have so much in common with post-literate and nuclear forms of communication?
7. How did uniformity and repeatability of the print production process affect human arrangements in time and in space?
8. Why should the speeding of information flow for the print reader create historical perspective and background? Why

Projects and Questions - Print - 2

should the much slower information flow of the manuscript make such background impossible? Why should the electronic speed of information flow eliminate historical background in favour of "you are there"?

9. Why is homogeneity of space and time arrangement natural under print conditions of learning?
10. Why was it revolutionary for Columbus to assume that he could keep moving in a straight line, in one direction? Why are there no straight lines in Medieval maps? Why was it unthinkable for them that space should be continuous and homogeneous?
11. Why should the Columbus pursuit of the straight line in navigation have been necessary in order to discover the round earth?
12. Are the flat earthers on strong ground in terms of our Western devotion to Euclidean space?
13. In garment making and hence in clothing styles, the straight seam was impossible before the sewing machine. Trace some of the implications of the straight line and of mechanism in one or more other fields of human organization.
14. How much is our notion of "content" affected in the case of printing by the blank page as filled with movable types?

READINGS AND SUGGESTIONS - PRINT

Uses of Communication, H. A. Innis, Oxford University Press,

(1951)

Distortions in Communications, Marshall McLuhan & E. S. Carpenter,
Simon Press, (1950)

From Script to Print, H. J. Chaytor, W. Heffer & Sons, Cambridge,
(1950)

Oris, Method and the Decay of Dialogue, Walter Ong, S.J.,
Harvard University Press, (1959)

A propos of this book, Father Ong traces the rise of habits of visual organization of knowledge in the later Middle Ages before and after printing. Dialogue is necessarily non-visual and involves minds in maximal participation in the processing of knowledge. Renaissance method increasingly eliminated such participation.

To-day, with nuclear non-visual forms of knowledge presentation, we turn again to dialogue.

The Right to Learn, Glen McCracken

The Right to Learn underlines the unexpected effects of one medium upon another. Film releases aspects of the printed page not available to the person dealing with the printed page alone.

The movie as sequence of still shots has deep affinities with the Gutenberg assembly line of movable types, but whereas the movie viewer is in the role of the camera, the print reader is in the role of projector. It occurred very early to the manipulators of the printed word that print afforded a means of snapshotting the mind in action. In other words, a means of self-investigation of the type undertaken by Montaigne in his essays. The whole Senecan enterprise in prose is part of this snapshotting of the mind in action. Self-investigation is the correlate of self-expression. In the same way, self-portraiture among the painters is the correlate of perspective, or vanishing point and point of view.

PRINT

Here is the perfect example of a transformation of a medium by stepping up the degree of its definition. What may appear as quantitative improvement brought out qualitative changes.

This should suggest to us ways of observing the altering ratios of sense as producing a totally new focus of attention and awareness.

Just as speech is "contained" in writing, so with printing. At first print strove to imitate the texture of the manuscript. The manuscript was "contained" in writing.

The subliminal or Low Definition (L-D) presence of one medium in another has conferred upon the Western world an obsession with "content". This is easily checked. As for example in scientific formulas which contain nothing whatever but which are structures commanding other structures. With the prevalence of multi-media experience in the past century, artists and scientists alike have sought "pure" music, "pure" poetry and in general to purge one structure from other structures. In poetry and criticism this has meant the repudiation of "content" as having validity or relevance.

H-D - Uniform repetition...
 Lines...
 Sequences...
 Points of view...
 History...
 Calculus...

H/M Visual (H-D)...
 Speech (L-D)...

Fantasy...
 Individualism...
 Nationalism...
 Authority...
 Reader as projector...
 Assembly line...

INTRODUCTION TO PRINTS

It would be a sufficient justification to include this section on prints if only to bring to the students' attention the work of William M. Ivans, Jr. His Prints and Visual Communication (Routledge and Kegan Paul 1953) stresses the meaning which prints have had in the development of science. Until there was some uniform and repeatable means of transmitting non-verbal information, it was impossible for scientists to communicate. Mr. Ivans helps us to define a "backward country" as "one of those that have not learned to take full advantage of the possibilities of pictorial statement and communication". (p1) He spots, at once the disadvantages to knowledge of the "persistent habit of regarding prints as of interest and value only insofar as they can be regarded as works of art". (p1) He will receive increasing recognition as a master of media analysis, because of such critical awareness as this: "Historians of art and writers on aesthetic theory have ignored the fact that most of their thought has been based on exactly repeatable pictorial statements about works of art rather than upon first hand acquaintance with them. Had they paid attention to that fact, they might have recognized the extent to which their own thinking and theorizing have been shaped by the limitations imposed on those statements by the graphic techniques. Photography and photographic process, the last of the long succession of such techniques have been responsible for one of the greatest changes of visual habit and knowledge that has ever taken place and have led to an almost complete rewriting of the history of art as well as a most thoroughgoing revaluation of the arts of the past". (p2) Mr. Ivans does not merely offer

Introduction to Prints - 2

valuable data, he offers us better ways of perceiving data--an approach rather than conclusions. We must look on prints "from the point of view of general ideas and particular functions, and, especially we must think about the limitations which their techniques have imposed on them as conveyers of information and on us as receivers of that information" (p3).

To extend the kind of awareness, not only to prints but to all media is the aim and scope of understanding media.

The approach of Mr. Ivans readily reveals why historians until recent times "have rarely found anything they were not looking for". (p4) This remark of Mr. Ivans reinforces the insight of Siegfried Giedion in Mechanization Takes Command that "anonymous history" must be the students' main resource to-day. "Anonymous history" is without a point of view, since it is the actual mosaic of discoveries and developments which the collective and cooperative energies of men have patterned.

A private perspective or point of view directed towards such patterns is something for which we must now write a history, since it is a dated and dubious form of effort.

PROJECTS AND QUESTIONS - PRINTS

1. Why is it possible to give accurate verbal instructions for the construction of a bucket say, but quite impossible to describe a bucket? How does this problem relate to the importance of prints in the development of many forms of knowledge? (Ivans p.57)
2. A propos of p.50 of Prints and Visual Communication, consider some of the ways in which in other fields as well technical advance may be a setback for knowledge.
3. What has been the effect on the newspaper story of the line engraving? (Ivans p.98ff)
4. How did it happen that Dickens became a novelist by the accident of supplying copy for popular pictorial artists?

READINGS AND SUGGESTIONS - PRINTS

1. Look at the famous Illuminations of Rimbaud as a kind of newspaper hodge podge landscape, the idea for which he seems to have picked up from the popular magazines of his time. Why should such amusing and ingenious adaptations of popular art impress the highbrows? Is highbrowism to-day an attitude of those of shaky literacy?
2. Check James Atherton's The Ecce at Finnegans Wake for the very high degree of interest which Joyce maintained in the most commonplace forms of popular culture.
3. Why should Pablo Picasso take such an interest in American comic strips when the academic world does not?

READINGS AND SUGGESTIONS - PRINTS

Prints and Visual Communication, Wm. M. Ivans, Jr., Routledge and Kegan Paul (1953) London.

Art and Geometry, Wm. M. Ivans, Jr.

This book is concerned, among other things with the nature of Euclidean space. One of its themes is that it was not until the Renaissance that Western man finally freed the visual from the tactile. We have seen how print culture strongly stressed segmental one-thing-at-a-time approach to problems of organization of space and time.

1. What variations of attitudes to space and time might have occurred as a result of prints and engravings?
2. Would the preferred subject matters of the engraver provide a clue to the latent resources of the medium?

PRINTS

Prints like cartoons are of the lowest definition possible. Their fascination depends upon the systematic withdrawing of data. Note how such Low Definition (L-D) forms are automatically effective in other Low Definition (L-D) media such as television.

I have deliberately put the tactile component of prints in the High Definition (H-D) corner in order to challenge some attention. The tactile sensations are probably Low Definition (L-D) at best as compared with eye and ear. But all the more for that reason they would seem to imply and involve maximal participation from the perceiver.

Ivins suggested, in Art and Geometry, that the Greek geometric sense was profoundly tactual and that Euclidean geometry thus had to wait further development until the visual sense had been abstracted from the tactual sense in the Renaissance. (See T.V. chart for other tactile aspects).

HD

SC

Math and science...
into abstract visual frame
Pictorial space...
Perepective...
Line of force...
Abstract pictorial statement...
Syntactical net of rationality...
Tactual...
Contour...
Sculptural...

PICTURES

M/M...
Visual - H-D ...
Audible - L-D ...

Auditory

SI

LD

When someone like Orson Wells makes a bid to have an existence in newspaper or on radio, or as an intellectual, it is very confusing to the categories ordinarily created by the movie medium. By and large, the newspaper accepts as newsworthy figures created by any medium whatever, whether sports, or radio, or theatre, or movies. In fact, if someone appears in the news who does not already have some existence in some other medium we think of them as just ordinary people.

The power of various media to shape and to project huge public images of private citizens is basic to an understanding of media. In the case of the newspaper, the image which is given to the reader is of the community itself. The public press presents a kind of group picture of the global human community, hour by hour. This image is made by means of a collage or assembly of dozens and even hundreds of small items much as a wire photo is achieved by means of numerous dots forming a stippled pattern.

The make-up of each page must tend toward a selection in order to include a very large range of human interests. The mosaic of human interests thus achieved creates a strong impression of depth and range so that the ordinary reader is quite satisfied that he has made a real contact with the collective life of the community under the dateline indicated at the top of the page. Of course, if a reader suddenly discovers that he is reading yesterday's newspaper, the sort of disillusionment and letdown is acute indeed. Jazz musicians use as one of their strong figures of speech the phrase that recorded music is as stale as yesterday's newspaper.

Introduction to Press - 2

A newspaper seen on the kitchen floor often reveals startling aspects unnoticed when in the hands of a reader. If a newspaper were used as wallpaper, it would be in order to stress its peculiarities of layout and design. Any newspaper page tends to have many of the characteristics of the Marx Bros. gag circus. By definition, no two items in a newspaper can have any connection one with the other. The only connection between any two items in a newspaper is indicated by the dateline. The fact that it happened on our planet on a given day affords the only logic or rational.

David Riesman once conducted an inquiry among students at the University of Chicago as to why people read newspapers. The only consistent reason discovered was so that people could achieve some privacy in public conveyances. Perhaps the other side of the same picture is in order that people in the privacy of their homes can maintain contact with the public world.

Our public myth or theory concerning the importance of the newspaper in our political lives is not only valid but worthy of the utmost study. It is literally true that our politics depend heavily upon the existence of the newspaper. So does our commercial life. A most helpful way of getting at all this is to look at the patterns of society before the newspaper existed. It is only necessary to imagine ourselves totally dependent for news on radio and television. One of the best ways of understanding a newspaper is to watch the stages of development which the press has undergone. When it consisted of a sheet or two, the press was little more than an editorial. At a later stage, the press set out to gather news in order to gather readers. Then, in order to

Introduction to Press - 3

gain more readers it had to organize the distribution of news and the postal services began to grow. (See The Bias of Communication by Harold Innis, and Mass Communication, by Eric Barnow)

As Barnow pointed out, newspapers fairly soon discovered that what they printed was news. In fact, until they printed it, it wasn't news. This is a basic principle of understanding all media. A movie star is somebody who appears in movies. An author is somebody whose book gets published. The medium itself usually creates the commodity of fame and reputation.

In pre-print days, only very extraordinary people could be known beyond the borders of their own village. After print, an absolute nobody might become world famous. The newspaper carries this capricious aspect of publicity to the extreme.

An excellent way of discovering the form and meaning of the press medium is to watch its changed patterns as new technology intervenes. For example, the telegraph and cable services naturally had the most direct effect upon the newspaper, conferring upon it at once the dimension of "world telegram" or "globe and mail". And the items on the page were similarly altered. The individual news item, after the telegraph, tended to become even more isolated from any point of view or perspective. Correspondents from every part of the globe had only to neutralize their stories by withholding personal feelings for attitudes in order to simplify the job at headquarters of assembly of a daily global image of the new global village. So-called "objective" reporting is simply the omission

Introduction to Press - 4

of point of view. The news editor can deal more easily with neutral items. When such items pour in over the wires at high speed, there is no possibility of arranging them in a consistent perspective. And in all electronic kinds of data processing, private point of view tends to yield to a group awareness. The all-at-once of instantaneous speeds has very little room for the one-thing-at-a-time or private point of view of the pre-electronic arrangement of information.

PROJECTS AND QUESTIONS - PRESS

1. Does the aspect of newspaper as inclusive image of the community commit the newspaper to the job of exposing private manipulation of the communal thing? Is there an inevitable clash between the public nature and function of a newspaper and the private points of view of many of the interests in a community?
3. Consider the same news story as handled on radio and television, and in the newspaper. Do you think of any one of these ways of handling the news especially adapted to any particular kind of news? Does world news, for example, seem most appropriate in headline form? Does local news find its most appropriate form on the radio?
4. Which medium, press, radio, or television is most effective in gaining the participation of the viewer? Does the newspaper reader tend to be a mere spectator of events? Is the radio listener more closely involved? Is the television viewer most challenged to participate in action?
5. Does the newspaper typically create the outlook of the sidewalk superintendent in all community matters?
6. Is the job of the newspaper to dramatize the issues within a community?
7. How did the news photograph alter the nature of the newspaper and the news story?
8. How had the print affected the nature of news coverage prior to the photograph? (See Ivins' Prints and Visual Communication)

Projects and Questions - Press - 2

9. Has the influence of radio and television been to encourage newspapers to a more editorial attitude to the news? If news can be given by radio and television, does the newspaper see its unique advantage to consist in background to the news?
10. Why should the newspaper find so little sympathy with historical perspective on any matter? (See Time Magazine as newspaper trying to achieve historical perspective).
11. What devices does a newspaper employ to provide a sense of continuity from day to day for its readership?
12. Why should the newspaper, in processing opinion in such wise as to produce homogeneous emotions and attitudes, be a major means of mobilizing the manpower resources of a nation?

PRESS

The advantage of this chart approach in dealing with the newspaper is that it enables us to appreciate the press as a complex work of art without being sidetracked by this or that "pigment" or silly story. Just as art forms are maximal modes of organizing our sense lives, so we have been hindered from seeing these forms in modern technology if only because they have been stepped up to such high collective intensities. The teamwork involved in constructing such a daily pyramid as a newspaper so far exceeds any earlier human possibilities of organization as to make of a newspaper an unclassifiable art form. Having been taught for centuries that art is a private form of self-expression, we have no means of apprehending the artistic character of non-individual social activity. As someone said in beginning a study of photography, nobody can commit photography alone. This is true of English, or any other mass media.

Media study serves to begin the process of alerting the perceiver to the art values in collective media. As the so-called mass media threaten the individual, surely his best comeback is private enjoyment of the mass media. For here he enjoys a one-way advantage. The mass media may be able to swallow him, but they cannot enjoy him.

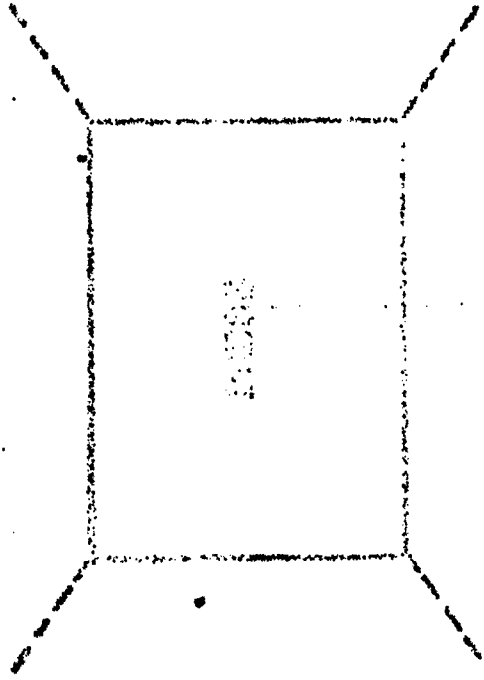
SC

LD

HD

SI

Collective S-C for private L.A....
Private S-I...
Multiple points of view...
Collective responsibility...
Inside story... collective occasional
visual nationalism...
Hyperbolic, big noise as v.i.p.



Visual in H.D....

Private S-C
for collective S-I...
But needs to sell
good word...

READINGS AND SUGGESTIONS - PRESS

1. At what point does the enlargement of type tend to push the printed word into the area of graphic art and design?
Consider the British habit of putting headlines on separate sheets beside the newspapers. Does the headline as a form try to be a capsule story? Does it have its meaning in itself, or is it necessarily linked to a follow-up story? What can we learn about the headline form from its variants in radio and television? What are some of the uses of headlines made by John Dos Passos in his novels? Does the headline resemble the world of the newsreel? Since the printed word is itself a visual code for speech, does the headline form of print tend to break speech out of the code into actual auditory effect?
2. Are noisy headlines a substitute for shouting newsboys?
3. Wynn discussing Masser's nationalist aims indicates that they are tied to a newspaper campaign. Let us ask ourselves whether nationalism would be possible without newspapers. If so, why? Is nationalism essentially visual in mode as compared with say radio? Does it involve the visualization of a vernacular unity rather than the auditory experience of vernacular unity? How far can the auditory experience of vernacular unity extend? How far can the visual experience of national unity extend? Would radio have a nationalistic or merely tribal effect in grouping experience and loyalty?
4. What has been the effect of television programs in shaping the handling of news items and editorial discussions?

5. A propos of question 4, some journalists maintain that the effect of this on the newspaper story was to curtail length of coverage and to reduce items. Was the effect of television to inject a much stronger personal dimension in news commentary?
6. Reader surveys of reading habits of newspaper readers has strongly indicated that people accept the total page as a reading ration giving the same kind of attention to advertisements as to anything else. A. J. Lieberman, the Wayward Press section of the New York Magazine, reported how in the 1952 election a New York Times fan discovered that his friends who also subscribed to the New York Times did not know which side it was supporting. He took the following action to offset this deplorable state of affairs. He had a pro-Republican editorial from the times reprinted as a full page advertisement in numerous newspapers across the land, hoping to get some attention for these opinions in advertisement form which they had failed to evoke in their editorial space.
7. Consider why the effect of the telegraph on the newspaper should be to eliminate point of view in favour of field of pluralistic points of view?
8. Do headlines act as mandates much as dress models in shop windows? That is, if we read the headline "British furious with Ike" is this in effect an order to the British to feel furious? How would any large population know how to feel

about a large number of ever-changing matters without a daily press? Does this imply that the newspaper exercises a tyranny over our thoughts and emotions? Does it at least choose the subjects concerning which we shall think, and feel from day to day?

9. Does the press provide a sort of landscape background for personal and national experience? Do advertisements for national brands belong to the same landscape? If neither press nor advertising existed, would we be likely to have thoughts and feelings different from those we have at present? What happened in New York during the newspaper strike, a few years ago? Why should classified advertising be the
10. See Mr. T. S. Eliot's poem "The Boston Evening Transcript". What does Mr. Eliot suggest in this poem is the function of a newspaper? Look at The Waste Land by Mr. T. S. Eliot--a poem layed out in the manner of a newspaper landscape.
11. See a book by K. Capek called In Praise of Newspapers. It is a kind of metaphysical eulogy of the personal lyric quality which newspapers introduce into life.
12. Why does the newspaper insist upon human interest? Does the newspaper get human interest from books and literature, or is it peculiar to the newspaper?
13. Why is Charles Dickens in a special way a novelist who derived his focus and techniques from the newspaper? How does the work of Edgar Allen Poe belong to the newspaper?

14. Why should the detective story in the fact of its form be tied to the press? (A detective story gets its form from being told backwards like a symbolist poem, in which the writer begins with the effect he wishes to achieve and then makes the poem to achieve that effect). See Poe's essay "The Philosophy of Composition" in which he describes the making of the raven.

INTRODUCTION TO PHOTOGRAPHY

In his book Painting and Reality, Etienne Gilson points out that up until Giotto paintings had been things. From Giotto to Cezanne, paintings have become things once more.

In his Prints and Visual Communication, William M. Ivins, Jr. traces the rise of the print with its "network of rationality" or mesh of lines for capturing the external world.

The minute mesh of lines, or statements about the external world suddenly yield in the photograph an image without lines. Reality is there as a total statement without syntax. It was as if by reversal that things drew themselves instead of being drawn. This automatic character of uniformity and repeatability which at first was felt in the printing press and in industrial output began about a century ago to characterize all levels of human activity. Handicraft values and habits of individual discrimination and enterprise seemed to be disappearing on all sides. But in the electronic age, do-it-yourselfness seems to return to all phases of human action, giving to the qualities of the handicraft a value higher than they ever had before. No where does this transformation appear more strongly than in the domain of photography itself. Whether it be private snapshots, or home movies, the skills of managing the camera receive ever more acclaim.

One immediate consequence of photography was to end the reign of perspective in painting. By holding up the human image with new salients and intensity, the photograph created a revolution in human clothing and personal appearance. Intensity of stress on visual values became especially characteristic of the human world. Where photography has not ruled the world of sense values, we still find stress on non-visual effects in clothing, on tactile values

Introduction to Photography - 2

for example, and in resulting indifference to drab and shabby appearances. The tinotype arrived just in time to record a world in which visual values had not yet achieved any power.

Photography would seem to have created an extrovert activist and outgoing generation. For the photograph puts the viewer in the role of the camera eye--that is aggressive and eager to swallow all that it can see. It recalls the Fox-Movietone advertisement "Eyes of the World" with the rearing lion enthroned...Such however is not at all the image of the television monitor where the viewer is not camera eye, but screen rather. Does this mean that television will now give us an introvert generation?

PROJECTS AND QUESTIONS - PHOTOGRAPHY

1. What was the effect of photography on newspaper and magazines?
2. What did the photograph do to merchandising and packaging and promotion?
3. What was the effect of photography on international affairs?
4. A newspaper story does not necessarily cross language barriers. How about photography in this respect? Was the effect of the photograph to enlarge the domain of reporting and human awareness?
5. What effect did the photograph have on the manner of writing newspaper stories?
6. Did technicolor movies make travel unnecessary?
7. Is the effect of exact repetition by photograph an extension of the Gutenberg technology? Does this sort of repetition make for competition?
8. How does the photograph in advertising alter the form and use of words in advertising? Do similar changes in word layout occur in the newspaper as a result of photography?
9. How does plane travel relate to the world created by photography?
10. Is there more participation, less passivity in film clips than in a whole movie?

Projects and Question - Photography - 2

11. What has been done differently indoors, and out of doors, since the photograph? Have not big cities had to spruce up since they began to be photographed in newspapers?
12. What has been the effect of the photograph on human attire from the tintype onward?

READINGS AND SUGGESTIONS - PHOTOGRAPHY

Prints and Visual Communication, Wm. H. Evans, Jr., Routledge and Kegan Paul, London (1953)

Painting and Reality, Etienne Gilson

One way in which to see the nature of photography is to contrast it with new visual experiences in the use of light through rather than light on. People like George Kapes are experimenting with a new type of painting, more or less in line with our experience of seeing a city at night from the air--that is, a world in which light is not on the object, but comes from the object. Here is a type of experience which is characteristic of television and also of the world of stained glass. The painter Rouault, in his way, just like Seurat, in his way, would seem to have anticipated this technological change in our environment, by painting pictures as if on stained glass.

In the camera world of photography, the viewer is the camera eye. But in the world of television, the viewer is not the camera, but the screen. Psychologically there would seem to be a great gulf between these two roles. Is the camera eye world superficial and the screen world of the introvert television viewer a thing of profundity and depth?

1. Consider the theme of the family album as a motif in Western culture.
2. Is the photograph by way of being a scale model? Is the earth seen from the air itself a kind of photograph? To what extent does the photograph and the mail order catalogue intertwine?

PHOTOGRAPHY

William M. Ivins, Jr., in his Prints and Visual Communication (Routledge & Kegan Paul: London (1953)) traces the stages of linear syntax in prints and woodcuts all the way to that point of no return where photography provides a total statement without syntax. "With photography, however, we come to a kind of print that no one could have made before the 19th century." (p.116) He proceeds with his theme (p.128) "At last man had discovered a way to make visual reports in printer's ink without syntax, and without the distorting analyses of form that syntax necessitated."

To-day we are so accustomed to this that we think little of it, but it represents one of the most amazing discoveries that man has ever made--a cheap and easy means of symbolic communication without syntax." (p.128-9)

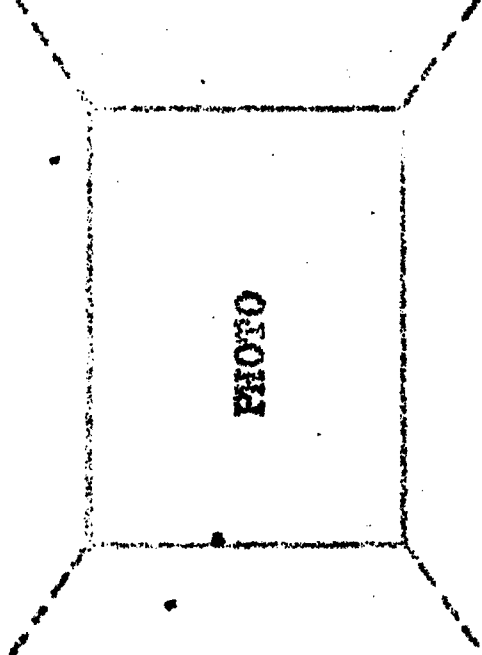
SS

HD

LD

SI

Total statement without syntax...
Dots and contours supplant
engraver's network...



Visual in H-D

Auditory...
Tactual...
Kinesthetic...
Sculptural contour in
place of line...

INTRODUCTION TO THE TELEGRAPH

Pre-electric telegraph was a very large enterprise in Napoleonic Europe so that as Dallas Smythe points out when the electric telegraph appeared, England and America had the advantage of being backward countries in this matter. Having no prior investment in pre-electric telegraph they were free to go ahead with the electric form without loss of earlier equipment.

Whereas writing and printing, and paper, and roads, had deeply affected the patterns of human association and man's ways of organizing space and time, with the telegraph came the first breath of space-time. That is to say, when information can move instantaneously over considerable distances, space and time alike disappear into a new structure which has been called space-time perhaps because it contains neither.

In Arthur C. Clarke's Voice Across the Sea, p.8, Harpers 1958, Clarke gives some basic data on the experimental origins of the telegraph, as preliminary to his long account of the laying of the first trans-oceanic cables. On p.8 he mentions "Cooke and Wheatstone produced their first telegraph patent in June 1837, and carried out their first practical trials in the same year over a mile-and-a-quarter long line between two London railway stations". Sam Morse, the American painter, had produced his first working telegraph instrument in 1836. As Clarke points out on p.9 "the beauty of Morse's system was its simplicity. It is so simple, indeed, that we tend to take it for granted and forget that someone had to invent it. Earlier telegraph systems had involved many wires and cumbersome sending and receiving apparatus. Morse produced a telegraph that needed only wire (the earth providing a return circuit) and whose transmitter

Introduction to the Telegraph - 2

was nothing more than a key to make and break the connection. By means of the dot-dash code, this single key could send any letter or combination of letters".

The telegraph and the wireless began to reshape our Western world more than a century ago. The entire structure of the assembly line and of movable types and of literacy was to be profoundly undermined by this electronic development. The telescoping of space and time already implicit in the telegraph contained also the principles of automation which would bring to an end the regime of the assembly line.

PROJECTS AND QUESTIONS - TELEGRAPH

1. Do you think the telegraph has had the greater influence in shaping our attitude towards time or towards space? Does it have to be called space-time when both time and space are relatively eliminated?
2. In writing, the medium of speech is encoded in visual form. In telegraph the same medium of speech would seem to be encoded both visually and audibly. By consulting a history of telegraphy, discover how far the originators of the Morse code accepted the plateau of print technology?
3. In a slower medium, time and space are not equally affected. Illustrate from the book, the newspaper and the private letter.
4. How could we determine the changing patterns of inter-personal life or of inter-cultural life which have resulted from the extension of the book and the newspaper? Look at the form of Pamela by Samuel Richardson to get a sample of what it felt like to be alive when the private letter was becoming part of daily life.
5. Do not the changing forms of literature and painting and music record our altered feelings about ourselves and about our ways of association?

6. Which of our media has confirmed us in the habit of thinking that the "content" of a work is the main verb, as it were, and that the medium employed is mainly a neutral "container" for such "content"?
7. For a century we have had a daily snapshot of the globe in the telegraph newspaper page. Does the structure and character of the telegraph page of the daily press tell us how we may expect to have to organize our approach to politics, and to the arts and culture of the future? Would the fact that people like Rimbaud and Mallarmé and Eliot and Pound have organized major artistic work in this telegraph pattern provide any help or guidance in this matter? Does the artist become a sort of radar screen for the electronic navigator?
8. Why do the daily readers of the newspaper fail to perceive that the ordinary layout of the page equals or exceeds the outrageous fantasy of the Surrealist poet and painter? Why in an age of multiple media which involve all our senses all of the time does it become necessary for the artist to play hopscotch as it were with the human senses in order that we may retain our integrity and unity of perception? Is this not what Bernard Berenson meant when he said: "The painter can accomplish his task only by giving tactile values to retinal impressions"? Is this not why many people get lost in the presence of modern art? Are they not looking for one sense when the artist is eagerly translating one into another for them?

Projects and Questions - Telegraph - 3

9. Why is the uncritical and naive print reader especially prone to fall into this fallacy of single sense and single meaning?
10. How does this create a serious crisis for a print culture in an electronic age? Why does an electronic age inevitably favour the ear over the eye? Why does the act of hearing involve all directions at once?
11. Why should the sending or receiving of a telegram seem more dramatic than even the ringing of a telephone? What is there in the American set up which causes us to specialize the use of the brief telegraph form for grief?

READINGS AND SUGGESTIONS - TELEGRAPH

Voices Across the Sea, Arthur C. Clarke, Harper and Brothers,
N.Y. (1958)

Broadcasting and Television Since 1900, Maurice Gorham,
Andrew Dakers Ltd., London, (1952)

It happened over and over again in the early hours, as it were, of new inventions in the 19th century that commentators foresaw some of the major consequences. In Voice Across the Sea, one catches something of the excited prophetic spirit that waited upon so many 19th century developments. By comparison we seem to have come to take everything for granted.

1. Consider how, just as the first decades of print were dominated by the image of the manuscript so the first years of radio and television were dominated by the patterns of the immediately preceding technology. The familiar type of this pattern is "the horseless carriage" and "wireless".
2. Consider how the 400 line image presented by the television monitor is a testimony to centuries of print culture. How necessary is this linear structure with its scanning finger moving from left to right to the existence of television?
3. The British still say wireless for radio. (See Voice Across the Sea and Broadcasting and Television Since 1900 for background material to explain this verbal habit.
4. The physicists of our time have often urged the need for a "Unified Field Theory" to provide a base for the inter-relationship of all knowledge. Why is such Field Theory an inevitable feature of modern physics?

Readings and Suggestions - Telegraph - 2

What problems result for other subjects like history and economics and language study from media patterns which involve the daily experience of the globe as a small tribal drum or telegraph? Is it possible to maintain as practical units our older divisions of knowledge and experience?

TELEGRAPH

In his radio days, Walter Winchell made valid and imaginative use of the telegraph medium. He combined the sound of the typewriter and the telegraph with the shrill urgency of his own voice as he said: "Mr. and Mrs. North America, let's go to press!"

Because of the very intense nature of the High Definition (H-D) character of the telegraph, we would expect in advance the Low Definition (L-D) corner of our chart to be hard to fill in. One characteristic of the H-D corner of the chart of any medium is that it tends to be occupied by conscious individualist traits while the L-D corner tends to get filled in with unconscious collectivist traits. I had no such plan in mind to begin with, but was simply groping my way.

If private urgency and anxiety characterizes our ordinary awareness of the telegraph, it is equally certain that its overall operation is to turn the world into a sort of tribal drum ever throbbing with low insistency. A similar L-D aspect of telegraph is its power to create an inclusive global image by means of the montage of newspaper items. The simultaneity of telegraph coverage translates various media into a single global snapshot. When ordinary time and space are eliminated by the instantaneous new time and new space, or space-time, they appear in such incongruous forms as the global snapshot.

HD

SC

Global buffer supplants semaphore
telegraph...
Note of global urgency...

M/M/M

TELEGRAPH

Tribal drum telegraph...
All-out-encounter creator
Auditory field... inclusive
Global snapshot

SI

LD

INTRODUCTION TO THE TELEPHONE

Mr. Clarke, in his Voice Across the Sea, p.18, reminds us that the word telephone came into existence before Alexander Graham Bell was born. "It was used by Professor Wheatstone as early as 1840 to describe a device he made for conveying musical notes short distances through wooden rods. By the 1870s, dozens of inventors all over the world were trying to achieve the electrical transmission of speech, and it was only a matter of time before someone succeeded. How true that is is proved by the fact that the American Patent Office received Elisha Gray's design for a telephone on the same day as Bell's but an hour or two later--to the subsequent great profit, needless to say, of the legal profession, which did very well out of the telephone.... Bell received the fame and his rivals are now only foot-notes in the history books. There are no second prizes in the race for any great invention or discovery".

PROJECTS AND QUESTIONS - TELEPHONE

1. How would a speed-up to telephone dimension of information movement affect the pattern of authority and of decision-making?
2. As your friends and parents how the telephone shapes their business and social lives.
3. What, for example, is the effect of the telephone in medical practice? In political life?
4. What has been the role of the telephone in the newspaper world?
5. Consider the way in which the telephone is used in Broadway plays, or in Hollywood movies, as indicators of its real force and character.
6. What qualities of drama and action come to mind in relating the telephone to stage and movie and novel?
7. Is it natural that one medium should appropriate and exploit another?
8. Is the use of which one medium makes of another the clearest testimony to its nature?
9. Why is the telephone so irresistably intrusive?
10. Why do Europeans and especially English people particularly resent the telephone?

Projects and Questions - Telephone - 2

11. Why does an Englishman prefer to manage his appointments by telegraph and postcard rather than person-to-person telephone calls?
12. Why is it difficult to exercise delegated authority in a world supplied with telephones?

READINGS AND SUGGESTIONS - TELEPHONE

In his Voices Across the Sea, A. C. Clarke, having dealt with telegraph and trans-oceanic cable entitles chapter XIV "The Wires Begin to Speak". He says: "The telephone was perhaps the last of the simple yet world-shaping inventions that could be made by an amateur working with limited resources. It has been stated that had Bell understood anything about electricity, he would never have attempted to make such a ridiculous device, as any real expert would have known at once that it couldn't possibly work".

In the same connection Katherine MacKenzie in her Alexander Graham Bell, Houghton Mifflin Co., N.Y. (1928) writes on p.41 that it was partly a failure to read the German of Helmholtz that had induced him to suppose that Helmholtz had said vowel sounds by telegraph. "But Bell was not to discover his error for two or three years. If vowel sounds could be sent by telegraphy he argued to himself on this premise, why not consonants? Why not speech?.... It was not until he secured a copy of the French edition of 'Sensations of Tone', before he left Great Britain in 1870, that Bell realized his mistake. He had been trying to repeat an effect which Helmholtz had himself not accomplished... 'I thought that Helmholtz himself had done it', Bell used to say and 'that my failure was due only to my ignorance of electricity. It was a very valuable blunder. It gave me confidence. If I had been able to read German in those days I might never have commenced my experiments'".

1. Is the all-at-onceness of telephone a big step towards automation and away from assembly-line sequential pattern?

TELEPHONE

Anyone who can remember the old trunk-line telephones knows how they were a means to community rather than privacy. The same instrument, when stepped up technologically, had opposite characteristics.

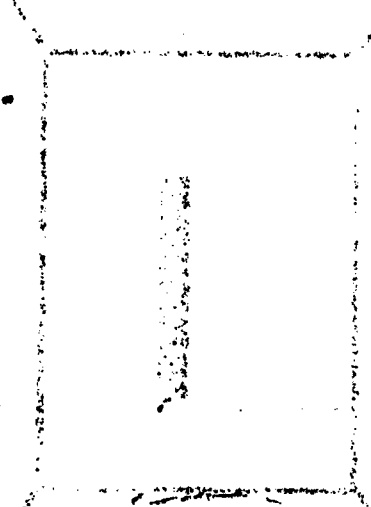
To-day, the older character of telephone as communal appears notably in radio programs that call private homes at random and put the private person into the public broadcast.

When two media are suddenly combined in this way, the resulting chemistry sometimes produces recurrence of primitive characteristics. The newspaper, hard pressed by television, may suddenly discover a new resource in an appeal to a more primitive medium of interchange. Most coast communities which can still sustain an interest in baseball are not unfamiliar with the use of newspaper advertising for swap-deals.

If the most individual and High Definition of telephone is its urgent and intrusive power, the Low Definition collective aspect is its power to decentralize organizations.

In management the end of centralized hierarchical structures comes automatically with the telephone (See page 96 of Landmarks of Tomorrow by Peter Drucker). Here is a splendid example of the chiasmic or reverse characteristics of a medium as it is pushed very far in one direction.

The exclusive person to person character of telephone results in the end of the reign of personal authority.



Federal...
 Executive...
 Direct Delegated authority...
 Recommendation of
 structure...
 Overriding delegated
 authority...

INTRODUCTION TO THE PHONOGRAPH

The phonograph has been studied by Roland Gelatt in The Fabulous Phonograph (Lippincott 1954). Most instructive to the student of media is the series of misconceptions which surrounded the phonograph as much as radio. "Look, said Edison, it's like this. I start here with the intention of reaching here--in an experiment say, to increase the speed of the Atlantic cable: but when I have arrived part way in my straight line, I meet with a phenomenon and it leads me off in another direction and develops into a phonograph".

Edison once layed down a general rule for aspiring inventors: "When you are experimenting and you come across anything you don't understand, don't rest until you run it down; it may be the very thing you are looking for or it may be something far more important".

The technique of research that Edison here points to is the "mosaic" one described by Georg von Békésy at the opening of his Experiments in Hearing. "The very thing you are looking for" is the natural way of referring to our standard method in research in which we try to get everything into a single consistent picture or perspective. The exploratory "mosaic" pattern of research is the one referred to by Edison when he says: "or it may be something far more important".

Edison had been looking for a means of speeding up telegraph transmission when he hit upon the phonograph in 1877.

Introduction to the Phonograph - 2

Related to this episode is another major reversal familiar to the modern artist in symbolist form. I refer to the fact that at many levels the artist to-day is aware of the consumer as the producer. As the electronic creates a total field situation, the audience is naturally involved more and more as producer and creator. The art forms which result from this new situation are increasingly do-it-yourself forms.

Edison's friend, E. K. Johnson, set out on a lecture tour in 1877 to expand on the marvels issuing from Edison's laboratory. "In the course of one of my lectures (in Buffalo) "it occurred to me that it would be a good idea to tell my audience about Edison's telephone repeater. My audience seemed to have a much clearer appreciation of the value of the invention than we had ourselves. They gave me such a cheer as I have seldom heard". (Gelatt p.20)

In the North American Review of June, 1878, Edison predicted ten ways in which his invention was to benefit mankind. Most of these ways depended upon the arrival of electronic tape to make them real. The first one "letter writing and all kinds of dictation without the aid of a stenographer" is a case in point. In fact it was the fate of the phonograph at first to be regarded as an adjunct of the business world and to be overlooked as a means of entertainment.

The novelty of the telephone increased this confusion. That two recent inventions should have quite different meanings was not obvious in 1878. Edison "could not or would not countenance the potentialities of the phonograph as a medium of entertainment.

Introduction to the Phonograph - 3

He insisted that it was not a toy. He resented its use for amusement. And for years he deliberately discouraged the phonograph as a musical instrument". (Gelatt p.44)

These types of initial confusion are of the utmost value in providing clues to the grammars or structures and patterns of the situations which the new medium was about to transform.

It will be many years before analysts and historians, capable of using such clues, have taken up the job of popular cultural history. Even such a concept as "popular" or "entertainment" or "mass medium" provide valuable clues to the cultural assumptions of our own world--assumptions which are changing very rapidly indeed.

PROJECTS AND QUESTIONS - PHONOGRAPH

1. Why did the telegraph, the telephone and the phonograph become so tightly intertwined in their origin and development?
2. What do we learn about the contemporaries of Edison from his listing among the benefits of the phonograph (a) the teaching of elocution; (b) "clocks that should announce inarticulate speech, the time for going home, going to meals, etc"; (c) the "Family Record"--a registry of sayings, reminiscences, etc. by members of a family in their own voices, and of the last words of dying persons".
3. What has been the effect of the phonograph on the development of the orchestra?
4. Why should the early phase of the phonograph have created a hardening of the musical categories?
5. Why should LP have ended the brief reign of the limited orchestral repertoire?
6. Why should LP have made feasible the easy and inexpensive recording of the music vocal and instrumental of all cultures?
7. Is the LP development dependent upon tape recording?

READINGS AND SUGGESTIONS - PHONOGRAPH

The Fabulous Phonograph by Roland Gelatt, (Lippincott 1954)

In connection with the confusions attending the development of the phonograph see The Wonderful Writing Machine by Bruce Blivins.

The originators of the typewriter were sure of only one thing. It could not have any commercial use. In the world of business, the personal touch of private calligraphy was indispensable. If the phonograph altered the repertoire of music and the character of orchestras and musical instrumental ensembles, consider also how printing affected the world of music, vocally and instrumentally.

Why should musicologists be so unwilling to consider technological effects upon various phases of the art of music? How does this same unwillingness to study the operation of technologies upon the arts and sciences concern us to-day in the world of teaching and educational adaptation to the new media?

PHONOGRAPH

The phonograph presents a major item of modern folk-lore. Like almost every other item of modern technology which has flavored and shaped every aspect of our experience from childhood, it has received no attention from historians, psychologists or sociologists. The people who have studied it with minute attention are poets beginning with the symbolists who discovered in the various mechanical musical instruments of the past hundred years a new range of feelings and sensibility. Laforgue and Baudelaire are full of illusions to the mechanical and weary agitation of nerves brought on by hurdy-gurdies and mechanical pianos. In "The Waste Land" of T. S. Eliot, the entire episode of the typist and the phonograph makes the ideal pattern for the student of media. Here a great poet is interpreting the meaning of the major media of his time as they shape the lives of his people. It would not be hard to show how the phonograph, as a medium, has shaped the movie and the novel. The old song hit from "The Broadway Melody," entitled "If I had a talking picture of you" draws attention to certain basic relations between movie and phonograph which could easily be extended to the printed word as well. One medium always exploits another when possible. It seems to be a basic human impulse to translate one sense into another, and one medium into another.

Memory...
Retention...
Broken record - Campbell
H.M.V. repeat...
Playback record...

Visual in H.D...
See Elia...
See moving...
See Hif I had
a talking picture
of you...

PHONOGRAPH

Auditory in H.D...

Mechanical and
tired blues...
Idiosyncratic...

INTRODUCTION TO MOVIES

The moving picture, which could not have been invented before photography, also depends a good deal upon the nature of printing. Only our Western culture in which four or five centuries of printing had obtained could have produced the motion picture. Because the printed word is itself a sequence of black and white still shots of language in action.

The reader of the printed word is in large degree performing the role of the movie projector. By moving the still shots, or words at a reasonable pace, he creates the strong illusion of sharing the movements of another mind in action. As with movie, the book reader seems to enter into himself and to create a world of privacy and isolation.

To-day, it is a common observation that circular movement, or the principle of the wheel, which we in the West take so much for granted, is an abstraction from organic form. An animal, when running, rotates, as it were, and to have abstracted this rotary character from the organic situation gave man his major mechanical triumph. As with printing, the nature of the rotary movement of wheel is uniformity and repeatability. The movie depends upon these principles in every respect.

It is perhaps historically fitting that the first movie consisted of a sequence of a dozen or so cameras set up in a line to photograph the action of a running horse. There was a wager that at certain moments the horse ceased to be in contact with the ground. And so it proved.

The technique of film is to roll up the outside world on a

Introduction to Movies - 2

spool or reel in a sequence of still shots and then to unroll it backwards in order to reconstruct the illusion of a forward movement.

As mentioned before, the printed book had done this for the movements of the human mind, since Gutenberg, with consequences which permeated all phases of Western life and technology. The sound movie necessarily followed the development of radio technology. Sound movie transformed the visual organization of the movie experience and seemed to discourage the Russians from further experiment with the movie form. They had brought the auditory dimension to the silent movie, as it were.

PROJECTS AND QUESTIONS - MOVIE

1. In view of the various cultural backgrounds of England, France, America, Russia, India and Japan, what qualities would you expect to appear most in the movies made in these countries?
2. In his Film As Art Rudolph Arnheim for example says that the American film maker excels in the single shot. The Russian in montage. Why should this be?
3. Why should the European and the Russian and the Japanese have regarded the film as an art form from the first? Why should the English speaking world have such difficulty in seeing popular forms of entertainment as art forms whether the movie or the comic strip?
4. How did movies sell the American way of life to the backward countries of the globe? Consider the role of uniformity and repeatability as indispensable to competition and rivalry. How could competition thrive where unique expression and achievement are stressed?
5. Was the picture story borrowed from the cartoon world?
6. Is there any hoop-up between magazine picture stories and silent movies? If so, is it in the isolation of one emotion at a time?

READINGS AND SUGGESTIONS - MOVIES

Films as Art, Rudolf Arnheim, University of California Press, (1957)

Film Form and Film Style, Sergei Eisenstein, Meridian Books (ME-10)

Film Technique and Film Acting, V. I. Pudovkin, Lear, N.Y. (1949)

The Liveliest Art, Arthur Knight, Mentor Books (MD 263) (1957)

1. Consider the tie-in between photography and the movie in the matter of narrative.
2. How do the current advertisements for Kodak reveal the space and time meaning of the snapshot medium? Do they omit significant aspects of time and space as they relate to this medium?

FILM

M. Artand, writing on film in Transition notices in the first place that in the 1920's film supplied himself with a sense of private identity and in the second place that American films provided the French at least with a physical sense of their own bodies. These two observations are complementary.

It has often been noticed, as a paradoxical feature of movies, that although they must be seen by a group in order to be enjoyed they have the effect of isolating the members of the audience and of driving each into his private world. (This is not the effect of watching television).

M. Artand's second point is equally valid, but much more novel. A High Definition (H-D) visual medium in the S-C (Subjective Completion) quarter is strongly tactile. Such is the case with photography. A High Definition visual medium automatically challenges the perceiver to fill in the missing senses. A Low Definition (L-D) visual medium like television automatically challenges the perceiver to strengthen the weak impression offered to him. Film is not merely a visual medium, however. It is highly kinesthetic in its direct impression and since the advent of sound, the task of filling in has altered greatly.

Film makes us the camera eye, conferring upon us an omnivorous power to swallow the entire external world. It thereby makes us extremely aggressive and extrovert. Its jittery, segmental flicker (even though 32 frames a second) is probably as much the source of jazz jitterb as anything else at all.

Film - 2

In film, then, the High Definition effects tend toward group introversion. What about the Low Definition effects? We have pointed to the drive towards isolation of the individual in the audience, and the drive into "itself". Are these not closely tied to private fantasy and textual experience?

That popular song of the 1930's "If I had a talking picture of you" will repay study in this connection.

HD

You are the camera...
World your oyster...
Extrovert jazz...

PIIM

Audio.-Vis.-Kine in H.D.

Introversion...
Isolation...
Fantasy...
Tactical...

SI

SC

INTRODUCTION TO RADIO

The British word wireless embodies a kind of history of the radio instrument. Because, initially, radio was not thought of as a broadcasting form at all. It was thought of as an extension of the telegraph principle--strictly utilitarian in scope. In practice it was used for ship-to-ship and ship-to-shore communication. (See Dublin post office first broadcast 1916)

Further obstacles to the use of radio as a broadcasting instrument were made by the big electric industries. It was, in fact, the amateur radio hams who broke through the big monopolies and who created a popular radio audience.

Since television, radio has acquired a new batch of characteristics. It has ceased to be a network operation. It has turned increasingly to individual needs and to new kind of programming. Characteristic of this is the substitution of several small sets for the single console model--specialized listening--specialized programming.

The car operator is catered for at various times of the day. There is the new type of coffee pot program for the housewife. There are hi-fi programs for the evening, and for the expert. Radio had, during some years, become a form for group listening. After television, it reverted to its more private, individual mode.

In Broadcasting and Television Since 1900 Maurice Gorman says: "Whilst wireless telephony was still being used only for point-to-point communication, there was just one example of the use of wireless telegraph for what must rank as the first genuine news broadcast, and this happened in Ireland during the Easter Rising of 1916. The Republicans had seized the General Post Office

Introduction to Radio - 2

and numerous other buildings in Dublin, and one of their first actions was to establish a wireless station and a military post to protect it. The station was at the corner of O'Connell Street and Lower Abbey Street, and the transmitter was a $1\frac{1}{2}$ kilowatt ship's set taken from a disused school of wireless telegraphy. (According to "War by the Irish", by John McGann, the commander of the post, Captain Tom Woulfe, was killed by a sniper's bullet during the first attempt to erect an aerial on the roof.) Knowing the British war-time censorship would clamp down on any news of the rising, the Republicans used the shipping wavelength to announce that the Irish Republic had been proclaimed in Dublin. The broadcast was in fact picked up by ships at sea and relayed to America, where the papers printed it. So far as I can trace, this was the first time wireless had been used not to reach a known receiving station nor to call help, but simply to convey news.

But this was still wireless telegraphy, sending its signals in Morse. True broadcasting, sending speech and music direct into people's homes, was still to come, and few people seem to have seen its possibilities lurking behind the new fact of wireless telephony. Some did. It was in 1915 that David Sarnoff in America advocated the idea of a broadcasting service under his own imaginative title of a Music Box in the home. Sarnoff was then on the commercial side of the American Marconi Company, and his memorandum to his Managing Director explaining his great idea bore no immediate fruit".

Introduction to Radio - 3

The obsession with the pattern of radio as linear and the recognition of its real decentralized character came with the activity of the radio hams.

"Broadcasting owed its resuscitation not to Press, Parliament, public, or the wireless industry, but to the amateurs; that ridiculed minority of "ham" who spent all their leisure hours operating their home-made sets. They talked and listened to each other, played gramophone records to each other (all in the name of technical experiment), and when they could they listened to the concerts broadcast from the Hague and the Eiffel Tower. (They were not yet able to listen to America, where broadcasting was growing fast, though that was to come surprisingly soon.) The amateurs missed the broadcasts from Chelmsford and loudly demanded some other professional transmissions with which to compare their own results. There were not many of them--some 4,000 by the beginning of 1921, of whom only 150 had transmitting as well as receiving licences--but they were endlessly enthusiastic, and they were nearly all organised in one or other of the wireless societies. They gave the Post Office no peace. The Post Office offered them special transmissions of wireless telegraphy but they demanded telephony: in other words music and speech.

At the end of 1921 the Post Office received a petition from 63 societies representing 3,360 amateurs demanding wireless telephony transmissions, "primarily to serve the scientific purpose of improving the receiving arrangements", but the spokesman of the societies referred also to weather reports, news, and music, which were already being received from foreign wireless stations,

Introduction to Radio - 4

in a way that showed clearly that what they wanted went beyond purely scientific tests. This time the Post Office yielded and authorized the Marconi Company to broadcast speech and music for the amateurs, to the extent of one programme of fifteen minutes' duration each week".

This is an elementary principle of all artistic utterance and composition. As Robt. Louis Stevenson once said of the daily newspaper "I could make of this the greatest epic in the world if only I knew what to leave out.

To come to grips with the matter of dialogue somewhat more directly, it need be said that it depends upon an everyway simultaneous flow which is a very far cry indeed from the one direction, one level flow of the printed page, or of the lecture platform.

Electronic technology instructs the world again with simultaneous, every direction information flow. We cannot choose but live this way under electronic conditions. We can choose how to think but that again is very different from choosing program "content". To-day, we need to understand what Berenson meant when he said, in 1895: "The painter can accomplish his task only by giving tactile values to retinal impressions".

Berenson is pointing directly to the job of the painter as that of dialogue--the interplay and translation of the senses at a focal point of contemporary relevance. Mere flow of the most excellent impression does not confer relevance of function on any medium whatever. As dialogue comes back, relevance acquires primacy. Dialogue is the only means of achieving it at all, however briefly. Dialogue ends the regime of the consumer and the producer. In dialogue the consumer is a producer, and the producer a consumer.

Introduction to Radio - 5

With radio it is easy to notice one of the major features of electronic media, namely the powerful drive toward the extension of human dialogue into all levels of human affairs. The book had steadily undermined the nature and role of the dialogue in teaching as everywhere else. (See Walter Ong's *Ramus, Method and the Decay of Dialogue* - Harvard University Press, 1959).

The reason that radio fosters a return to dialogue is auditory. Actual speech, for example, is technologically a very poor medium. Speech fosters highest levels of awareness, precisely because it does such a poor job of communication. When a medium is doing a poor job, it commands the highest degree of participation between speaker and speaker, between speaker and audience. For that reason alone, it is possible to point out that television is kinder to dialogue than is radio, or is the film.

Radio and film are technically superior to television in terms of information flow achieved. In the same way, writing is superior to speech, and print to writing. But the interchange which is dialogue reaches a higher intensity as information is withheld.

PROJECTS AND QUESTIONS - RADIO

1. What was the effect of the radio on movies? On newspapers?
On magazines? On language? On the concept of time?
2. How do P.A. systems relate to radio?
3. Does the P.A. system affect the visual as well?

READINGS AND SUGGESTIONS - RADIO

Broadcasting and Television Since 1930, Maurice Gornham, Andrew
Dakers Ltd., London (1958)

The Art of Radio, Donald McWhinnie, London (1959)

1. Is the disc-jockey a product of radio?
2. Consider the differences between a P.A. system and radio.
Do they have similar characteristics when charted?
3. Would you say that as long as we are within hearing distance
of radio the sound is inside your head?

What then is the Highest Definition attribute of radio? The answer to this question already exists in the public image of this form.

I propose this as a basic principle of media research. Whatever the public will accept and verbally repeat about any medium, already possesses a valid base in human experience. Nobody can hire anybody to accept or repeat an attitude toward anything, except in the world of advertising. That is why a popular phrase of wide acceptance is high-level psychological evidence of collective experience.

Let us take the 'radio ham' as the type of radio personality, and also by the popular phrase, that designates that personality. It was the 'radio ham' who forty years ago broke up the big commercial formations in the radio field. (See Maurice Gerham, Broadcasting and Television Since 1900, London: Andrew Dakers Ltd. (1952))

The complex meanings and attitudes in the word "ham" will serve as an example of what I referred to concerning popular phraseology for a basis of media research. The "ham" has very much of the private operator, very much a High Definition figure. What do we discover in the Low Definition corner of our chart? What are some of the group consequences of radio whenever it impinges on a community? Let us say, right off, that radio has a very different effect upon a highly literate community from its effect upon a newly literate society. The ratio of the senses in a society that has been reading books for centuries is not the same as the ratio

of the senses in a society which has been tribal and pre-literate within living memory. Let us also say that the effect of printing upon the Chinese people, with their very ancient ideographic tradition could not possibly be the same as the effect of printing on a mainly auditory linguistic group.

The immediate effect of radio on a tribal society is to intensify whatever elements of tribalism are present. The reasons for this are simple and natural and most ardently to be avoided. The tribal man lives in an auditory world. That does not mean that it is a world of many noises, but rather that the patterns of experience have a "field" character meaning that they are assembled from many directions at once. When Joyce calls his last book, Finnegans Wake he means among other things that the Finn or tribal structure of human social organization is about to awaken again. When man lives globally to the notes of tribal drums on a planet that is no more than a village in scope and extent, he cannot avoid the all-at-once-ness of pattern which is the auditory and tribal type of structure. When radio was new in Europe, it awakened the old tribal energies and patterns of various European peoples giving us the form which we call fascism. The effect of radio upon the sensibilities of completely detribalized man, such as the British and the American, has to stir up a deep sense of responsibility for the human family in the forms which we associate with socialism and communism.

To-day in North America, radio and the disc-jockey have wide acceptance among the teenagers. The teenager seems in many ways to be a tribal man, suddenly intruding in our once civilized and detribalized midst. The tribal man naturally follows the family pattern of togetherness in all things. Think of the fatality of Western man deploring togetherness while he bends every energy and skill to promote it by the new media.

SS

LD

Person to person...
Private...
Intimate...
Visual...

Group dynamics...
Togetherness...
Tribal memories...

RADIO

Auditory in H-D...

HD

SI

INTRODUCTION TO TELEVISION

Maurice Gorham in his Broadcasting and Television Since 1900 points out how "the original Baird system was mechanical depending for its scanning process on a spinning disk: the M-EMI system was all electronic, using no moving parts". Does not this transition from the moving part to the moving of information represent the larger meaning of the electronic revolution itself? At the present moment, for example, is it not the sudden recognition that war now consists not of the moving of hardware, but of information which leaves the Western world floundering and unprepared? Economists have pointed out that as information levels rise in a culture or economy, not only does one product tend to be easily substitutable for another, but information itself tends to substitute for the previous movement of commodities. And since the movement of information constitutes by far the largest human activity to-day, war itself tends more and more to assume the informational character. The same factors of change of information pattern by means of new media, likewise constitute the emergence of new staples, and new natural resources in a society. Once again, the concept of wealth and resources and commodities as "contained" in the sum situation continues to prevent us from seeing that these things are, in reality, constituted by new forms of human association.

One way of illustrating this is to point to our realization to-day that money is not a store of value, but a means of moving information. And credit cards then take on the character of money.

It was in 1936 that the EBC began regular television broadcasting only to close down in 1939 with the outbreak of war. The

Introduction to Television - 2

British were able to pioneer television because of their large government set-up for broadcasting and their indifference to commercial sponsors. Nevertheless, as Maurice Gorham points out (p.234-5 Broadcasting and Television Since 1900:

"The path of the television pioneers was far harder than that of the radio pioneers of the nineteen-twenties. As has been mentioned before, transmitting television is a more complex and elaborate process than broadcasting sound, more expensive, more limited, and more apt to go wrong. In the same way, viewing is harder than listening. You cannot enjoy television whilst you are washing up, darning socks, doing home-work, playing bridge, or driving a car. You have to stop doing anything else and watch the screen as well as listen to the loudspeaker. Nowadays there is no need to draw the curtains and put out the lights, but the set has to be where the whole family can see it, and this usually means arranging a room round it, and keeping the room solely for television when anybody wants to watch; this at a time when living-space generally is more limited than it has ever been.

Further, television reception is more difficult than reception of sound broadcasts. The most expensive set, the most elaborate aerial, will not always ensure against interference even when the set is quite close to the station. At different distances a hospital using diathermy treatment, a main road carrying a stream of motor traffic, an air-lane overhead, may all interfere with the picture, and the eye is less tolerant of distortion than the ear."

The effects of television on the American public (for 10 years) have not been observed simply because attention has been focused in the wrong area. This subject is considered in the section on the Media Charts, but as with any new medium the effect will naturally occur where there is most alteration of sensuous habit and attention and this, of course, has nothing to do with the program content of any medium.

Introduction to Television - 3

The total contrast between the movie, and television images, closely corresponds to the huge discrepancy between the manuscript and the printed page. For those who ignore the constitution of the images, and who are convinced that the "content" of the images is the central matter, it is only necessary to point out that they continue to identify themselves with that august company for whom in all ages the horseless carriage cannot hide the noble figure of the horse.

The gegenschein of a departing technology never fails to colour our views of new technology. When this illusion reaches the intensity of suggesting that new technology should do the work of the old, a serious danger develops. For those who imagine that film and television can be integrated with existing curricula as incidental aid, it is necessary to point out the fatal past orientation of print culture.

It is precisely because print is a form of applied knowledge, the first mechanization of a handicraft, that it has both a profound pragmatic bias and a strong bent toward doing in a more efficient way what has already been done. Such a bias is not found for example in the Russian world, nor in many parts of Europe where print has only been an incidental and recent form of experience. Where print has not held sway, the human mind retains a resilience of structural design and innovation which is a major advantage when dealing with electronic media. The whole North American institution is in utmost danger from electronic media, both because

Introduction to Television - 4

the habits we have acquired from dealing with print culture are in themselves limited, and brittle, and because the challenge of the electronic media demands the utmost spontaneity and resilience.

PROJECTS AND QUESTIONS - TELEVISION

1. Engineers claim that a thousand line television image would provide almost as high definition as the present movie image. Supposing that an equally high definition of retinal impression were achieved for television, what would be the effect of its multi-point mosaic structure over and above the retinal impression?
2. Why should the broken line of the television mosaic emphasize the sculptural contours of objects?
3. Why has sculpture traditionally been spoken of as the voice of silence? Does this mean that the sculptural object exists on the frontier between sight and sound?
4. Is there any possible line of investigation suggested by the fact that sound waves become visible on the fuselage of jet planes just before they break the sound barrier? Does this suggest that the various human senses are translatable one into the other at various intensities?
5. If sculpture exists on the frontier between sight and sound, does this mean that beyond that frontier is writing and architecture and enclosed or pictorial space? In a word, must the nuclear age civilize those primitive dimensions from which we emerged by means of writing and the visual organization of experience? Can this be done without mere destruction both of the primitive and of the civilized achievement?

Projects and Questions - Television - 2

6. Consider the power of any medium to impose its own spatial assumptions and structures. Extend your observations to discriminate and distinguish between the kinds of space evoked and constituted by the film on one hand, television on the other.

READINGS AND SUGGESTIONS - TELEVISION

Broadcasting and Television Since 1900, Maurice Gorham, Andrew Dakers Ltd., London, (1952)

In Medical and Biological Illustration, (Jan. 1957) Vol. VII No. 1, discussing "The Television of Operative Surgery", Dr. David S. Ruhe and Michael R. Klein mention that their experience with motion picture utilization deserves comment. Films not of the guest surgeon's own production were used in emergencies and when patients proved unsuitable.

"Surgical films as teaching aids do not have the impact of television, nor do they create the feeling of intimacy between teacher and audience. At least one teacher has stated the importance of a personal approach in acceptance of the television medium. We would emphatically confirm this opinion".

1. In the same year, I heard Dr. Ruhe speaking at Omaha, Nebraska, to an NAEB Conference. One of his observations then was that on television the viewer in some mysterious way seemed to become the scalpel and to do the operation. Would not this be directly related to the very strong tactile factor in the television image?

TELEVISION

Let us ask again what is the most noticeable and popularly recognized feature of television? Perhaps it is the negative charge that it is the enemy of reading. If so, it may be that we shall have to pay much attention to reading as a consumer activity. The reader of print is not a camera eye but a projector of images. The viewer of television is neither camera eye nor projector, but if anything he is the screen. On the other hand what about Low Definition (L-D) with regard to television? Does not the character of the viewer being the screen at whom the images are directed from the monitor? Does this not strongly suggest that the viewer is in an extremely introverted role? Is there anything about the television generation of the past ten years to suggest a strong swing towards introversion in the youngsters of to-day?

The television image as at present constituted is of Low Definition or quality. This automatically involves the television viewer in a good deal of do-it-yourselfness and in strengthening the feeble image.

Students of later 19th century painting are familiar in the work of Seurat with the contour effects which he achieved by means of light and shade obtained by numerous points somewhat like a wire-photo to-day. The numerous points which constitute the monitor image have a similar contour effect lending to the television image a strong sculptural and tactile quality. Notice that this tactile quality is in the S-I (Structural Impact) and not the S-C (Subjective Completion) corner of our chart.

Television - 2

Our attitudes towards space could not help being affected by so radically new a sense ratio as is constituted by this new image. The more I examine the character of the television image, the harder it is for me to find anything in common between it and the moving picture.

HD

You are the screen...
You are the scalp...
Do-it-yourself...
Ambivalence...
Sculptural...

TELEVISION

Visual-Kina. in L-D...

Introversia...
Cool...
Daadpan...
Impersonal...
Acoustic resonance
via sculptural form...

LD

The RYERSON MEDIA EXPERIMENT in the maximized testing of the media was made possible by the following people:

A. Roy Low, Department of Physics

Carl Williams, Department of Psychology

Isabel Macbeth, School of Radio & Television

James Peters, Department of English

Gerald Kane, Department of Radio

William Sokira, Department of Radio

Geofrey Jamieson, Department of Television

MEDIA EXPERIMENT

Embodied in the present report is the account of a multi-media experiment which a group of us had carried out earlier. It was in two phases. The first phase was a simul-cast of four media, followed by a retention test. The second phase involved the same media in "high definition" or "maximal" form. The first phase, when published, got world-wide attention. The result was sensational and unexpected. Using all the approved methods of psychological testing we had expected to obtain no significant result whatever. But the result had been notably significant.

Repetition of our experiment by others confirmed our result. Since in the first phase the use of the various media had been minimal or in low definition, it seemed worthwhile to repeat the simul-cast using the same lecture materials and the same questions with carefully randomized groups. The result, not understood at the time, was quite surprising.

Television which had priority in the first phase dropped below radio in the second phase. The other media retained their positions. This second phase closely concerns the current report on understanding media. Television, I show is a low definition medium, and radio is a high definition medium. That is to say, the quality of sense image offered by television is visually of poor quality and in the case of radio the quality of auditory image is very high. When a low definition medium like television is augmented by studio gimmicks, its teaching impact is strikingly reduced. But when a high definition image like radio is similarly augmented, its teaching impact is increased.

Media Experiment -- 2

To have discovered this principle alone would have amply justified the present year's effort. Yet the discovery was made earlier, and the understanding of the discovery only became possible as a result of this year's work.

MASS MEDIA AND LEARNING--AN EXPERIMENT

Introduction

A seminar on culture and communication has frequent cause to concern itself with the mass media. The experiment here reported was the culmination of our first year's effort. While in a very real sense an interdisciplinary product, the responsibility for the design, analysis and presentation of results fell to the psychologists in the seminar as being most familiar with the techniques involved.

Most research on mass media is concerned with either of two objectives: studies of the influence of one medium on attitude changes, and consumer research designed ultimately to help sell soap or whatnot. Little if any work has been done on the degree to which various media facilitate or impede learning, if indeed they have any influence at all. The question does not occur readily because the mass media themselves are seldom seen as educational devices. The silent assumption that mass media exist primarily for entertainment and propaganda, which underlies most such research, automatically excludes research with an educational bias.

Problem

In its most general form, the problem investigated can be stated thus: Is learning affected by the channel over which information comes? If so, how and to what extent? While we usually assume that television, for instance, is more compelling than radio in securing our attention, we also assume that we can easily compensate psychologically for this differential advantage. Whenever our attention is really aroused, we can and do attend to the radio address, news or weather report with the firm conviction that we will end up with all the information we require. An extra effort of attention, we assume, will easily make up for the fact that we could have gleaned the same information with less effort over television.

With these considerations in mind, the experiment was designed to provide the 'same' information in the identical wording, to four similar audiences, each of which had the 'same' motivation to seek out and remember the information presented. Given the same objective examination on that information, would the only systematic difference remaining, namely the different media used, make a statistically significant difference to the average scores of those audiences? Television and radio were obvious choices for an experiment on mass communication. Since they are often contrasted with 'real' situations, a 'live' lecture audience was added. The fourth medium chosen was the printed page since it is widely regarded as the essential carrier of Culture--with a capital C--and is most often thought of as being threatened by the newer media in terms of its continued existence.

Design

From the standpoint of design, all that was required was that the factual content be clearly transmitted without undue distortion over each of the four media and that it be cast in such a way that no one medium was favoured over others. The method employed was the method of constant stimuli whereby the lecturer himself provides the stimulus without reliance on the peculiarities of particular medium 'props'. The fact that his gestures, intonations, etc., are differently transmitted by the different media is precisely the point of investigation. That is, since each medium carries the information in its own way, do these differences affect the learning process of the audience?

The subjects were 108¹ undergraduates in the General Course in Arts at the University of Toronto, all of whom were studying anthropology as one of five courses comprising their year's work. The lecture topic 'Thinking Through Language', was unfamiliar to them, and from their point of view, both difficult and stimulating. The class list was arranged in descending order of academic grades, based on first year results, and then arbitrarily divided into four groups or audiences on a stratified sampling basis, such that each audience contained an equal number of high, average and low students. For this purpose, 'high' means grades of A and B+, 'average' means grades of B and B--, 'low' means grades of C+ and below. After the four audiences had been selected in this way, another person arbitrarily assigned each audience to a medium. These were announced to the students on arrival at the CBC studios. Each group went to a separate room in the CBC buildings where they were supervised by members of the seminar. The lecture was delivered before the studio audience and simultaneously relayed to the television audience and the radio audience. At the same time, mimeographed copies of the lecture were distributed to the reading group, who read at their own speed and for the same length of time as it took to deliver the lecture. Immediately thereafter, each group wrote a thirty minute examination on the lecture. This consisted of nineteen multiple-choice questions (four alternatives each), plus one broad essay type question to be answered in 200-300 words. Most students finished before the nominal time limit. The test should therefore be regarded as a 'power' rather than a 'speed' test. The papers were graded by the anthropology section of the seminar and turned over to the psychology section for analysis.

Here is a section from the lecture and its covering question:

I recall one experience I had several years ago while living with the Eskimos. I was riding along on a dog sled one bitterly cold day--the wind hit me in the back and seemed to come out the other side--when I turned to a hunter with me and said, as best I could in Eskimo, 'The wind is cold.' He roared with

laughter. 'How', he asked, 'can the wind be cold? You're cold, you're unhappy. But the wind isn't cold or unhappy!' Now this involves more than just another way of speaking; it involves another way of seeing things. Consider how different human action must appear when seen through the filter of the Eskimo language where, owing to the lack of transitive or action verbs, it is likely to be perceived as a sort of happening without an active element in it. In Eskimo one cannot say: 'I kill him' or 'I shoot the arrow', but only 'He dies to me', 'The arrow is flying away from me', just as 'I hear' is 'me-sound-is'. Similarly where we say, 'The lightning flashed', as if the lightning did something, as if it involved something more than just being lightning, the Eskimo merely says 'Flash'. Eskimo philosophers, if there were any, would be likely to say that what we call action is really a pattern of succeeding impressions.

When we say, 'The lightning flashed' we:

- a read action into the event
- b use an intransitive verb
- c describe the event as being without action
- d describe the event in the only possible way

The essay question called for an understanding of the whole lecture: 'The lecturer described two native philosophies, but at the same time said that the Eskimos, for example, had no philosophers. How would you interpret these two statements in terms of the lecture?'

Controls

It is a truism that whereas the 19th century public sought to learn the results of science, the 20th century public is, more realistically, interested in the methods whereby results are achieved. For this reason if for no other, some discussion of the controls used in this study forms an essential part of this report.

The term 'control' itself is a highly ambiguous term, as our seminar quickly learned. As used here, it means only those measures which were taken to hold constant all factors, other than the four media themselves, which might be expected to bias the results.

It does not mean that experiments of this type are totalitarian, that social scientists are dictators at heart, that science scorns understanding and seeks only prediction and control, that our subjects were humiliated or 'pushed around' without their consent, that we laboured under the illusion of playing God with other people's lives, that the study was undertaken to fool, bully, delude, hoax or otherwise cajole an innocent group of students.

In terms of controls, the lecturer was his own control. His choice of topic and his organization was his own. The controls were first, that his information be basically accessible via each channel and second, that it should not rely on external 'props' of any kind. Finally, and most difficult of all, the lecture had to be memorized so that the reading group would receive exactly the same content as the other audiences. In order to compensate, as far as possible, for the fact that the reading audience was deprived of both of the sound and sight of the lecturer, certain key words in the mimeographed material were capitalized to give something of the same emphasis they received as delivered.

The subjects were selected to be as homogeneous as possible, i.e., same course, same class and age range, and sharing a common subject matter. Academic ability was controlled by the method of stratified sampling described above, since it was a fair assumption that good students in general learn more than poor ones, even in lectures.

Motivation was controlled by an arrangement with the class instructor who agreed to incorporate performance on our examination into the course term mark. In order to avoid undue anxiety, the arrangement was that those who did well would get a term mark bonus, while those who did indifferently or poorly would suffer no penalty. These factors also operated to produce a good attendance at the studio, and to offset, if not entirely eliminate, factors of personal preference for one or another medium. In addition, the students were fully informed about the experiment and its objectives, and afterwards, were the first group to hear an analysis of the results.

No attempt was made to equate groups for age, sex, socioeconomic status, familiarity with television, radio, etc. These were assumed to be roughly controlled (i.e., equated) by random assignment to each group.

The examination was controlled by the use of the objective, multiple-choice type of question, which permits of easy quantification. The score on this section was simply the number right. It should be noted that since each question contained a best answer among the four alternatives presented, the measure yielded is a measure of immediate recognition, not recall.

No note-taking was allowed during the lecture, in an attempt to stimulate normal conditions of television and radio listening. Whereas the lecturer automatically 'paced' the studio, television and radio audiences, thereby conferring a precise degree of control on them, it was not possible to duplicate this pacing for the reading audience. In this sense, this group was not as well controlled as the others.

Results

The results given here are confined to an analysis of the multiple-choice section of the examination. The statistics used were the analysis of variance and the 't' test of significance² of differences between means, i.e., averages.

The analysis of variance showed that media in general do make a significant difference in the amount learned as measured by the multiple-choice test. It also showed, as we suspected, that academic ability makes a significant difference in the amount learned. Having established the fact that the four media per se, were significant to the learning process, it was then possible to test the audience averages for significance of difference in order to rank them in effectiveness. This analysis showed that the television average was superior to the radio average--significant at the 1% level of confidence (i.e., there are 99 chances in 100 that this is a true difference). It also showed radio to be significantly above both the reading and studio performances--significant at the 5% level of confidence (i.e., there are 95 chances in 100 that this is a true difference).

The graph shows the examination results by audiences and by academic ability, shown here at three levels. This display is more revealing than the averages for each medium, since it shows how the media affect each level of academic ability. The clearest indications come from the television, radio, and reading comparisons, where it can be seen that the media exert their effects at all three academic levels. Note for example that the low students on television do exactly as well as the middle students on radio, a clear instance of medium effect. Note too, that the greatest single discrepancy on the graph occurs between the good students on television and radio. Apparently television has its greatest effect on the best students!

The studio results are puzzling. The 'lows' and 'highs' reflect presumably the distractions and excitement of the studio itself, but if they do, why were the middles unaffected by this to the point that they did as well as the television middle group? Originally the studio group was proposed as the equivalent of a lecture audience. One glance at the confusion of the television studio convinced us, before the statistical analysis, that whatever this group was, it was not a lecture group. We retained it in the study but with the new name 'studio' group.

The table beneath the chart (p.7) shows the number of cases (N), and the averages for each audience together with the confidence level at which the differences can be accepted as significant.

Conclusions and Comments

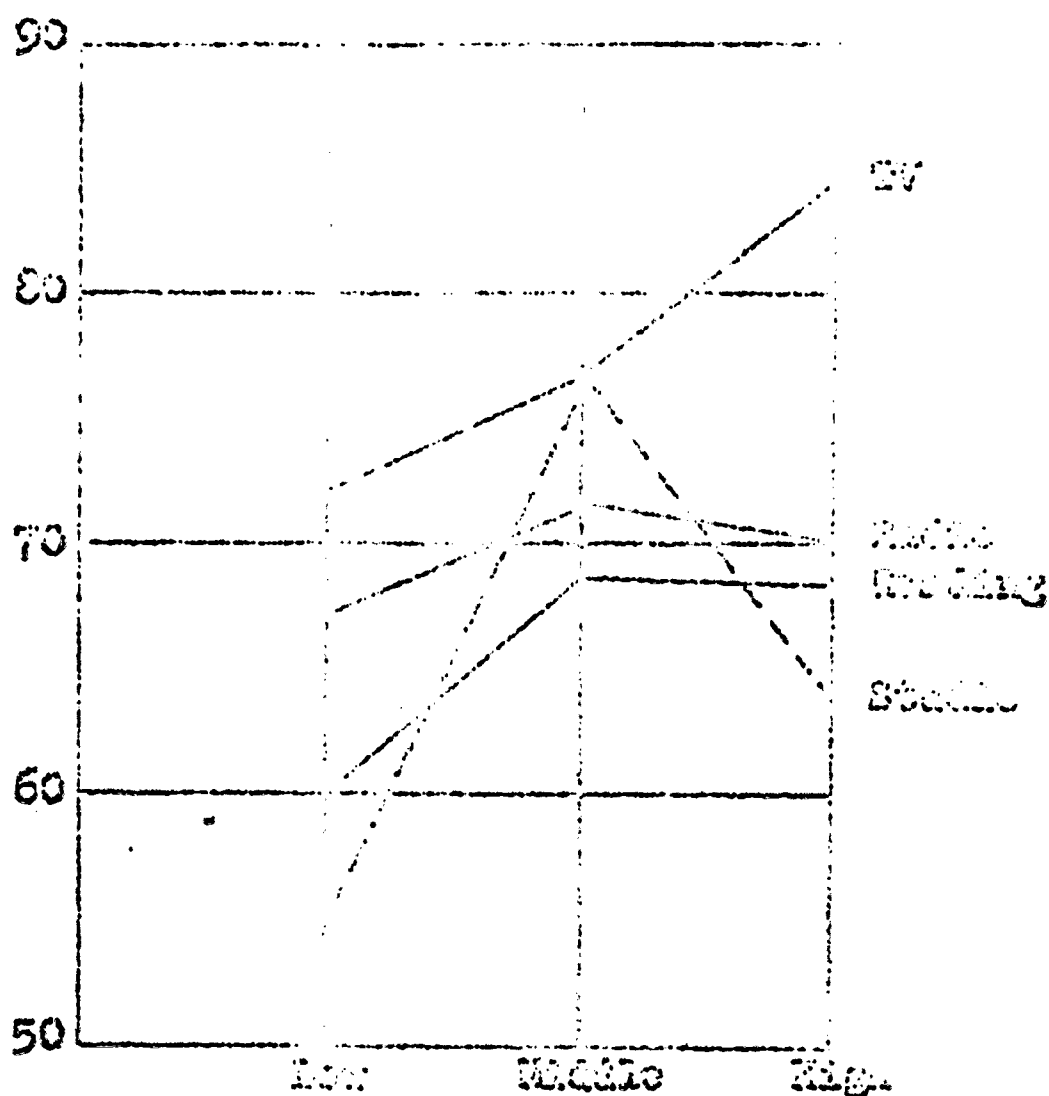
One surprise in the speech was the brevity of the speech. It is plain that while there is a great deal of interest in the mass media, and possibly a great deal of interest in the media for conveying information, the media is not the center of the study as the relationship of the media to the group. Many members of the audience were disappointed to find that of the four! One feature in the speech was the brevity of the speech from an examination of the speech. The speech was brief. In one portion of the talk, the speaker mentioned the group and delivery to account for the group. The speaker mentioned this passage was accurately answered by the speaker. The speaker mentioned, half the radio audience and the other half the audience.

It is then fair to say that there is a difference in immediate recognition, but not in the final results. It is also fair to point the reader's attention through the to reading in terms of their effectiveness under the same conditions. No conclusion is drawn on the available data.

At this stage of speaking, communication is far from. The study does not prove that television is "better" than radio or that either is profitable to look, or that "live" audiences learn little. "Have we got similar results with housewives, with engineers, or even with those same students presented with a totally unfamiliar topic, say, the revolution of estates in Athenian law? Would persons of average or below average intelligence react in the same way? Would children? These and a host of similar questions suggest that at least an interesting and important area of research has been tapped by this exploration.

1. Actually the number was 109, but to make the groups as equal as possible and to make the classification on previous academic standing clear, the final number was reduced to 108.
2. Statistically speaking, a difference between two averages is called significant if it could not have occurred by chance more often than 5 times in 100 occurrences. Therefore, the betting in this study is that we have 95 chances in 100 of being sure that the differences obtained are 'real' differences and not due to chance. In some cases we have 99 chances in 100 of being right.

EXAMINATION SCORES BY PERIODS



N = 108 (27 subjects in each audience)
each 'x' represents the average of 9 subjects

ACADEMIC LEVELS OF STUDENTS

Audience	N	Mean	Significant at
TV	27	77.2%	1% level
RADIO	27	69.2%	
READING	27	65.1%	5% level
STUDIO	27	64.9%	not sig. at.

Table showing average scores by media

In October, 1961, the first group was re-administered to the 74 students as part of the second experiment. In this first experiment, the results indicated that a new examination was warranted.

The multiple choice questions were given in groups, each with four alternative answers. It would be expected that a group knowing nothing of the subject would get 25% of the answers correct by guessing. Our subjects, however, were University Arts students who had taken courses in the Social Sciences and who could be assumed to be better than chance, even if they had neither seen nor heard the lecturer. We chose this as a control group was made the questionnaire was given to 18 Second Year Honour psychology students, selected because, through their general training in social sciences was similar to the experimental group's the lecturer was unknown to them and they had received no instruction from the lecturer.

During the eight-month interval some students had heard the lecture a second time when its videotape was shown on television to the general public and some may have shown and it with friends. It is possible here, however, that such reinforcement was random. To determine whether or not the 74 students re-examined were representative of the original 110, we compared the performance means of the two groups (Figure 1). Although in each case the re-test means were slightly lower, these differences were fairly uniform, not great, and therefore, not fatal.

It was anticipated that on the average the re-examination marks would be significantly lower than the ones obtained on the first test. It was further feared that if the media did not continue to influence the retention of learning over time, there would be no 'real' differences on the re-test among the four groups who received their lessons through different media. If significant differences were found on re-examination among the groups, this could be fairly attributed to differential effects of the media through which the information was originally obtained. The results of the two tests for the 74 students are shown in Figure 1, broken down into the four groups, each of which was exposed to one medium. For comparison, the mean percentages of the original four groups are also given.

The questions were asked: "Have the differences demonstrated by the first experiment still in evidence after eight months? Did the differences in effectiveness persist or forgetting during this period?"

An affirmative answer to the first question was obtained by an analysis of variance of the data of the second test. It was found that the differences were still significant (i.e., could not be explained by chance only) even in 100 times between tests. It was not possible to analyze these results in detail because the data were unequal in number in the four media groups. In the original comparison, none were not statistically significant. The answer to the first question is, therefore, that the differences in effectiveness exist between the four media groups. The results showed that the order of ranking the media from last to second place, that is, television, radio, print, and tape, was with doubt in the original experiment and were not included in the conclusions; no interpretation is now made of this change in rank.

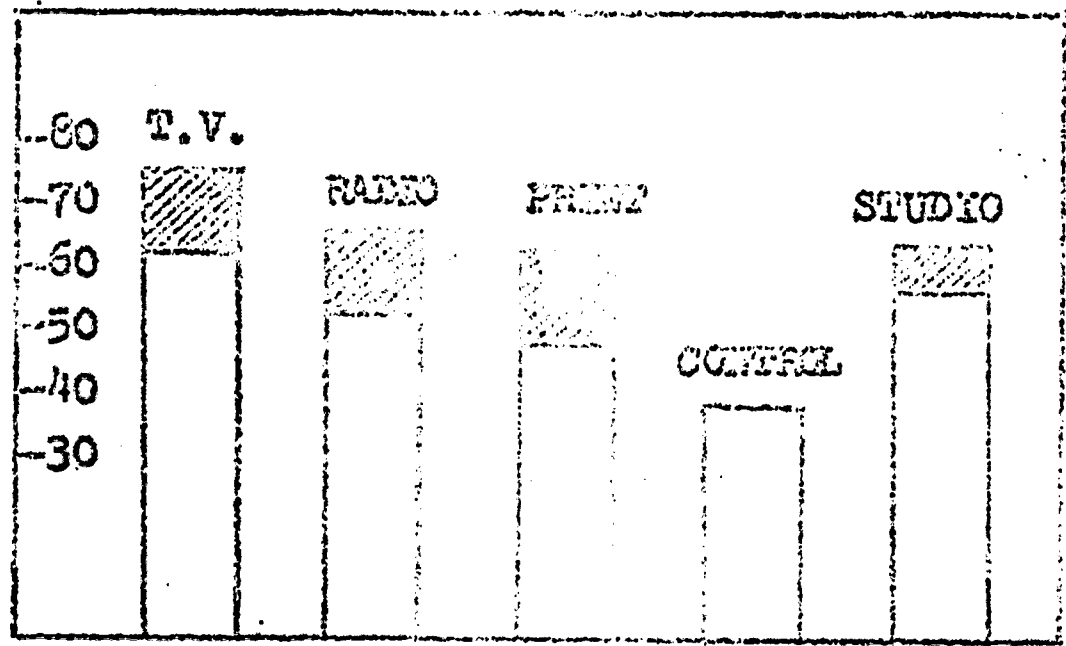
In order to answer the second question, it is necessary to compare the differences between the first and second tests for each group. The results were then tested by analysis of variance could not be shown to differ significantly from each other. This implies that the amount retained after a period of time is proportional to the amount originally learned. In other words, the rate of forgetting information is independent of the medium by means of which it was acquired. This was graphically demonstrated, in that the original ranking of media in order of effectiveness--television, radio, print--held after eight months.

Since it was found that for every group the mean percentage for the second test was significantly lower than for the first test, a third question was asked. If, after eight months, the students have in general lower scores, how much better than intelligent guessing are these second test results? This is answered in Figure 1 in a comparison of their results with those of the control group of psychology students. Their scores are better than random guessing, but significantly lower than the lowest of the four media groups.

In this particular experiment, media made a difference in learning, not only in immediate recall, but after eight months. The original order of effectiveness--television, radio, print--held after this interval. In this experiment, different media influenced retention by influencing the amount of original learning.

The qualifications given in MASS MEDIA AND LEARNING--AN EXPERIMENT about misinterpretations of the original findings apply to these later findings as well.

	REHEARSAL GROUP			ORIGINAL GROUP	
	First	Second		First	
	Test %	Test %			
Television	75.4	64.5	14	74.2	81
Radio	65.5	52.7	20	59.4	54
Studio	64.5	50.0	21	64.9	62
Reading	53.5	44.5	18	53.1	47
		73		105	



In this repeat performance, books were allowed to play each medium full play of its particular strengths and weaknesses. The subjects, just as in the earlier experiment, were chosen to be neutralized as much as possible. The only difference was that the medium remained the same. In the first experiment, the subjects were presented in a form in which an impartial observer could not have been misled. The lecturer used the blackboard and the microphone. Radio and TV employed sound and sight. The subjects and the lecturer. In the examination, radio and TV were used. The results, then, as in the first experiment, showed that radio and TV had a decisive advantage over the book. As a conveyor both of ideas and information, TV was, in the second experiment, apparently equalled by the deployment of all the audio resources, whereas radio was not. From such lowly beginnings, the technology is explicitly and implicitly being developed. The book, radio and TV were explicit in their medium, or medium? Would a reader explicitness, if it were in the medium, account for the ease with which they top other means of performance?

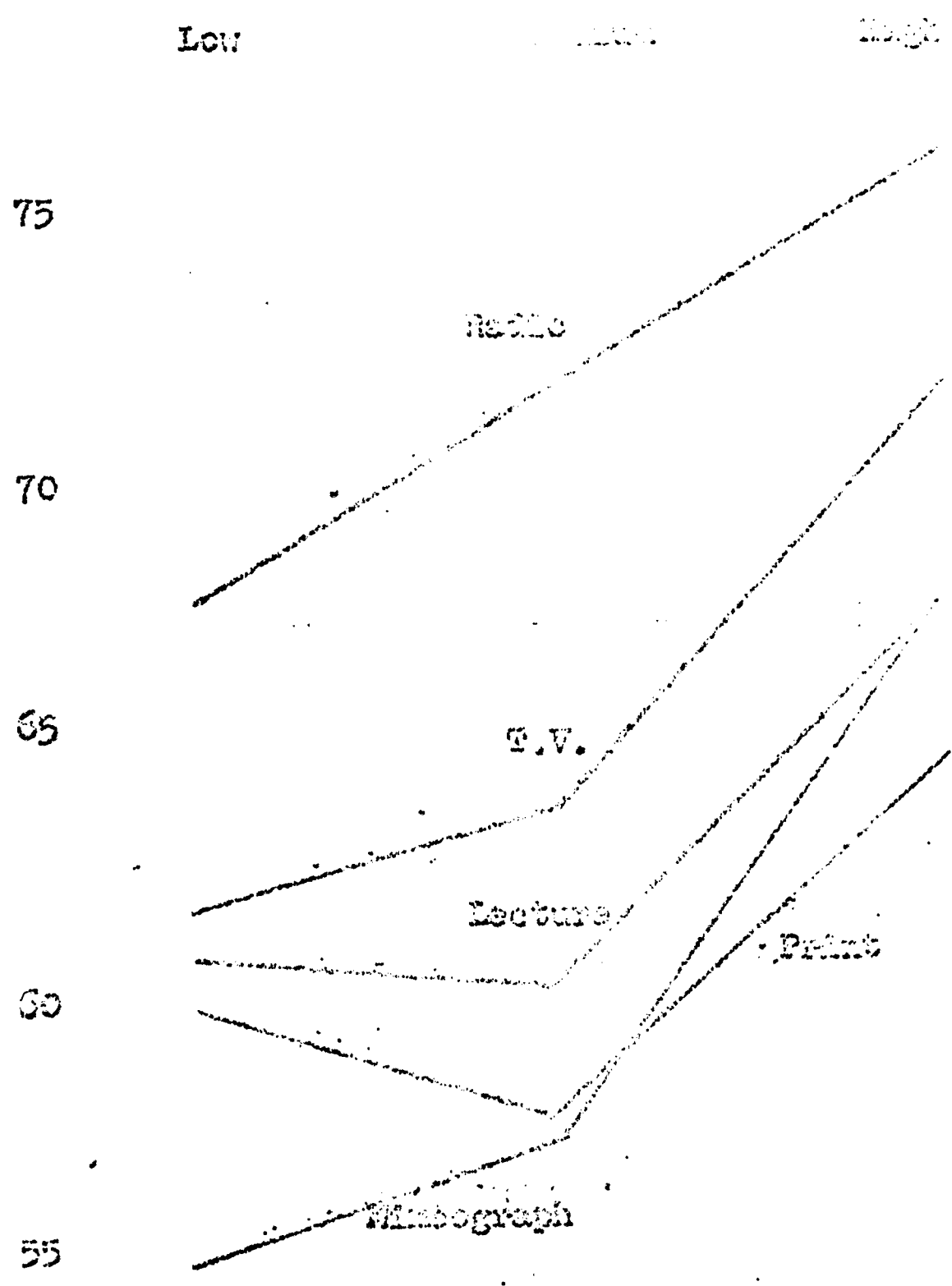
Announcement of the results of the first experiment caused considerable interest. The following question circulated the results with the comment that had, in fact, the scientific proof of the superiority of TV. This was, of course, and missed the main point, for the results clearly indicate the superiority of one medium over others. They clearly directed attention toward differences between the mediums, as good as to be of kind rather than degree. Some of the only facts were serious, not because TV won, but because point is, which most and you find Student Christian-types and intellectual little or literature and contribute less, but, in the end, have a vested interest in book culture. At home, they have radio and TV, which they employ merely to disseminate the values of book culture. They feel they should dedicate themselves to serious culture. This is why they can't use radio and TV with conviction and are afraid to use it comically, and so they end up with wacky-ism. They are like 16th century merchants who saw the book revolution as simply a means of propagating old ideas and failed to realize it was a monumental change in sensibility, in thinking and feeling.

Official culture still attempts to force the new languages to do the work of the old. It is the horse's carriage didn't do the work of the horse in the end. The horse and did what the horse could never do. Horses are fine. So are books.

Nobody yet knows the languages inherent in the new technological culture; we are all describing things in terms of the new situation. Our most important words and thoughts betray us by referring to the previously existent, not to the present.

The problem has been falsely seen as a rivalry vs. the mass media. But the mass media are democracy. The book itself was the first mechanical mass medium. What is really being asked, of course, is: can books' monopoly of knowledge survive the challenge of the new languages? The answer is, no. What should be asked is: What can print do better than any other medium and is that worth doing?

RESULTS OF THE STUDY OF MEDIA EFFECTS



I recall one day when I was in the mountains while living with the Eskimos. It was a very cold day and one bitterly cold day. The wind was blowing and it seemed to come out of the north. A man came with me and said, 'The wind is cold, the wind is cold.' He roared with laughter, 'The wind is cold? The wind is cold? The wind is cold? The wind isn't cold or unhappy.'

Now this involves more than just a way of speaking, it involves a way of thinking. It involves how different human activities are. It involves the filter of the Eskimo language, which is not a filter of transitive or intransitive verbs, but is likely to be perceived as a sort of happening, as something that is done. In Eskimo one cannot say 'He dies' or 'I die' but only 'He dies to me' or 'I die to me', just as 'I hear' is 'I hear to me'. Similarly, we say, 'The lightning flashed' or 'The lightning did something', as if it were something more than just being lightning, the Eskimo would say 'flash'. Some philosophers, if there were any, could be likely to say that what we call action is really a pattern of succeeding impressions. Such differences between languages--I don't mean Indo-European ones like French and German but native ones--are really tremendous. Some languages lack tense. Of course, I really shouldn't say 'lack' because this implies a deficiency, and there's nothing deficient about these languages. An Eskimo can express ideas that English cannot.

Take metaphors: in English when we want to express an emotional or philosophical experience, we have no choice but to use words which refer to real objects or real actions. For example, 'I grasp the thread of your argument', but if my level is over my head my imagination may wander. How does my imagination wander? Most native languages, on the other hand, distinguish between inner psychological experience and those that belong to the world of matter.

Let's take the language of the Trobrianders, a group of Pacific Islanders who live not far from New Guinea. Two famous anthropologists, Bronislaw Malinowski and Dorothy Lee, studied these people, and we probably know more about them than any other native group.

Now the Trobrianders are concerned with being, and only with being (nature, essence, existence). Change and becoming are foreign to their thinking. An object or event is grasped and evaluated in terms of itself alone, that is, irrespective of other beings.

over the world. The world is a big place, and it is full of people who are different from each other. But we are all human beings, and we all have the same feelings and needs. We should try to understand each other and live in peace.

One of the things that we should do is to learn about other people. We can do this by reading books, watching movies, and talking to people from other countries. We should also try to understand the different cultures and customs of other people. This will help us to live together in harmony.

It is important to remember that we are all part of the same world. We should not be afraid of people who are different from us. We should try to be kind and helpful to everyone. We should also try to make the world a better place for everyone. We can do this by working together and by treating each other with respect.

Let the children of the world be free. Let them be happy and healthy. Let them be able to live in peace and harmony. Let them be able to learn and grow. Let them be able to make the world a better place for everyone. This is our duty as human beings.

Now, let us think about the value of things. We should not be greedy. We should not want more than we need. We should be happy with what we have. We should also try to help other people who are in need. This is the way to live a good life.

had the matter... to...
men had...
indeed, ...
had ...
give ...
in ...
has ...
the ...
Valer ...
ring ...
sally ...
situation, ...
lies ...
love. ...
worthless and ...

Now the Trobrianders ...
they are quite capable of ...
pattern. But when a ...
utterly despicable. ...
giving her a gift. ...
to win her favour, ...
him as a sweetheart ...
she loves him, she is ...
in activity in which ...
bands with one another, ...
gifts as an inducement ...
turn in especially good ...
a vile phrase; he ...
should not cause the ...
a gift in return; ...
do it anyway. ...
ance events ...
value is either ...
exchange is not unlike ...
that at Christmas ...
been several ...
set- ...
forgotten brought ...
them, say 'Just a ...
present,' hurry up ...
then present it. ...
spoiled, in a way, ...
gotten up ...
until forced to by the ...

The Christmas ...
society: it is perhaps ...
most ...
behaviour is not ...
any line of activities ...
contrary, they do their ...
sequence or line.

NAME:
ADDRESS:
PHONE:

CIRCLE THE LETTER BEFORE THE BEST ANSWER. DO ALL OF THEM IF YOU CAN BUT DO NOT GUESS.

1. The Trobriand Islands are in:
 - a the Pacific
 - b the Caribbean
 - c near New Guinea
 - d Polynesia
2. The Trobriander values:
 - a creativeness
 - b the old and traditional
 - c the new and the different
 - d that which is useful
3. An art form in our society is valued for:
 - a its position within a patterned activity
 - b itself alone
 - c its financial value
 - d for many attributes, not all of which concern art
4. When we say, "The lightening flashed" we:
 - a read action into the event
 - b use an intransitive verb
 - c describe the event as being without action
 - d describe the event in the only possible way
5. The stone blades were:
 - a used as inducement
 - b equivalent to money
 - c part of a patterned activity
 - d gifts in payment for other gifts
6. English does not:
 - a stress causality
 - b differentiate between psychological and external experiences
 - c emphasize time
 - d employ a variety of adjectives
7. By lineality we mean:
 - a patterned activities
 - b emphasis upon being
 - c connections, usually sequential, between things
 - d the use of gestures
8. Our language and our culture structures experience so that it:
 - a leads or should lead to a desired climax
 - b emphasizes repetition and sameness
 - c can be responded to
 - d stands by itself, without reference to other experiences
9. In our language much value is attached to:
 - a changes in temporal sequences
 - b essence of being
 - c ability of emotional expression
 - d change and becoming

10. We stress causality and lineality because:
- a we are interested in relationships
 - b we are interested in being
 - c our language and culture teaches us to value them
 - d this is the most accurate way to describe reality
11. The Eskimo language is characterized by:
- a lack of nouns
 - b lack of tenses
 - c lack of transitive or action verbs
 - d lack of categories differentiating living from non-living
12. The English language makes continual use of:
- a several tenses (simultaneously)
 - b spatial metaphors
 - c words describing subjective, psychological experiences
 - d categories differentiating internal and external experiences
13. The Trobriand language emphasizes:
- a change and becoming
 - b varied use of adjectives
 - c temporal aspects of objects
 - d being and existence
14. A noun in the Trobriand language refers to:
- a a highly unique object
 - b being as a whole
 - c an object at a particular stage of growth
 - d useful objects only
15. Native languages differ from English because:
- a they cannot express causality
 - b they are not fully evolved
 - c they do not deal with temporality
 - d they contain other metaphysical systems
16. In our culture we tend to judge things in terms of:
- a intrinsic value
 - b qualities and attributes
 - c aesthetic satisfaction
 - d relation to other beings
17. Disregard of chronological sequence is characteristic of:
- a all primitive languages
 - b English language
 - c the thinking of small children
 - d Trobriand language
18. The implicit philosophy of English grammar makes us:
- a seek essence
 - b ask "why"
 - c value money
 - d see lineality and being
19. In the lecture an analogy was drawn between:
- a money and a Valentine
 - b foreign trinkets and necklaces
 - c stone blades and Valentines
 - d armbands and Valentines

20. Gift exchange among the Trobrianders is significant because it:
- a stimulates barter
 - b symbolizes kinship and friendship
 - c involves gifts which influence behaviour
 - d is similar to Christmas-giving

The lecturer described two native philosophies, but at the same time said that the Eskimo, for example, had no philosophers.

How would you interpret these two statements in terms of the lecture? Write 200-300 words. Use back of paper if necessary.

On the scale below indicate with a check mark
how you feel about the lecture

✓5	✓4	✓3	✓2	✓1	0	-1	-2	-3	-4	-5
1	1	1	1	1	1	1	1	1	1	1
Liked very					Indifferent		Disliked			
much							very much			

Connection for the person who is speaking and is speaking to whom, but what is speaking, what is heard and ignored the media; but obviously if a person is speaking into a P.A. system or into a radio microphone, etc., the who and the what are profoundly transformed.

That staples are media and media are staples. When iron ore and oil and lumber and fish are available to the population of a particular area, their patterns of association are much modified by this fact. Derson in his recent volume *AMERICAN CULTURE* draws attention to the power of cotton in the United States in creating homogeneous culture capable of creating a spontaneous folklore. The same homogenizing power over human institutions is exercised by any economic staple like wheat, or lumber in Canada, but this serves to draw attention to the same power which resides in the media of communication. The media are, in fact, themselves staples or new natural resources. Media are extensions of the human senses. They modify the patterns of human association while remaining rooted in this or that sense, and these staples are not limited to any geographical area, but are co-extensive with the human family itself.

Another peculiarity of media as staples or natural resources is this: as they step up the speed of human transactions the information levels of the community rise. As information levels rise, one commodity becomes substitutable for another. No staple becomes indispensable as information levels rise. The tendency is for information to move, rather than commodities. The stress shifts

in human study of the world. The world is not a static thing
process itself. The world is a dynamic thing, and it is
proceeding slowly but surely in the direction of a new
instead. Let us illustrate this by reference to the most
that most popular of all subject matters--the ever-present
of war.

To-day, civil defense would seem to consist in protection
against media fallout. In the past, war has consisted in the
movement of commodities back and forth across frontiers. To-day,
when the largest commodity of all is information itself, war means
no longer the movement of materials, but of information. What had
previously been "a peace war" of strategy within our own boundaries
now becomes the major "battle" of strategy across frontiers. In-
stead of competing for the dollars and dollars of our own citizens,
we are now engaged in trying to win the favorable attention of
Asian and African millions for the star turn or top act. Our own
conceptions of education and of culture are so completely tied to
3,500 years of literacy that the coming of the electronic revolu-
tion is much less obvious to us in the West than to a Japanese or
a Chinese or to an African.

Another basic aspect of the electronic is that it telescopes
centuries of development and evolution into weeks or months. In
speeding up actual change, it makes the understanding of change
much more feasible just as a movie of an organic process may reveal
years of growth in seconds. This such acceleration of growth in no

What I Learned on the Flight - 3

way prepared the human community to change to it. Suddenly there is a nine foot redwood where in the morning you had experienced a bedroom.

Our educational, political and legal establishments are scarcely contrived to cope with such change. There is no mercy for culture-lag in our new technology. There is no possibility of human adaptation. Yet in all these situations we confront only ourselves and extensions of our own senses. There is always the possibility of escape into understanding. We can live around these new situations, even if we cannot live with them.

What I learned on the subject . . .

THE NEW CRITICISM AND THE NEW POETRY

The so-called new criticism which followed after the new poetry which followed after the new developments in our modern world has most typically been engaged in explaining why works of art have no content and no subject matter. It was the new media themselves, from the telegraph (1836) onward which created the situation which the poets and painters tried to explain to us by "prophetic" new art forms. Is it not ludicrous that the very scientists who expected the radical changes should stand around with yammering and incoherent gesture while complaining of their inability to understand modern art?

For the past century, the artist has been our only navigator in social and political terms. The models which he makes are not wishful dreams that money can buy, but urgent factual instructions of the means of avoiding disaster. Big industry understands this, a little bit to-day. Artists move inward and upward in the commercial field through the department of industrial and package design. In the field of operations research, the artist accepts the priority which is not his reward, but his responsibility.

To suppose that the teaching of media in our schools should be a peripheral feature of an august and a well-tested curriculum could be a disastrous supposition indeed.

In purely realistic terms, I feel that the associated power of specialist and vested interests of many kinds definitely insures that we shall fail to meet any and every challenge that is offered to us in the electronic age. Why should we understand new media

What I Learned in the Project - 1

The New Criticism and the Social Sciences - 2

When no generation of the human past has understood all men? However, now that we have begun to understand all men. For the first time (see H. A. Marcuse, *Reason and Communication*), there is the outside possibility that we might decide to consider them as fit objects of study and control.

- END -

Marshall McLuhan,
Toronto, Canada,
June 30th, 1950.

Arnheim, Rudolf, Visual Thinking, New York: Da Capo Press (1969)

Atherton, Jason S., The Art of Writing, Englewood Cliffs & New York: Prentice-Hall (1953)

Atherton's book is among other things, the history of writing. It is also a history of all media. The book is the greatest of all manuals for understanding the media. Atherton will help you to understand the media.

Barnouw, Erik, Mass Communication, Toronto: Clark Howell (1955)

Bluestone, George, Novels and Film, Baltimore: John Hopkins Press (1957)

A detailed survey of the changes which occur in one form when it meets a different one.

Boring, Edwin G., Sensation and Perception in the History of Experimental Psychology, N.Y.: D. Appleton Century Co. Inc. (1942)

This book is indispensable in approaching the media-as extension of the human senses. All that man has said about the various senses through the centuries is here made available. However, the approach is extremely limited, since it avoids material relating to the various historical concepts about the senses to the cultural context, past or present.

Bussell, Jan, The Art of Television, London: Faber and Faber (1952)

Carpenter, E.S. and Meluhar, K.M., Evolution in Communication, Boston: Beacon Press (1950)

Chaytor, H.J., From Script to Print, Cambridge, England: W. Heffer and Sons (1950)

This unique study arose from the efforts of a scholar to understand how medieval poetry was shaped by writer and "reader" alike by the fact of the non-existence of print.

Clarke, Arthur C., Voices across the Sea, N.Y.: Harper and Brothers (1958)

Craickshank, Wm. M., editor, Experimental Children, Englewood Cliffs, New Jersey: Prentice-Hall (1955)

See chapter written by Leo Royden, "The psychology of impaired hearing", (p.128-33). Royden rejects the assumption that the senses exist or operate in isolation from one another. Much that is being done in the same psychology field is relevant to media study when it is seen that the media of communication are extensions of our senses.

Danavag, Vebjorn, Human Factors in the Design of Man-Machine Systems (1968)

Since television is a visual medium, the language of television is an essentially visual one. The language of television as factors are the means of translating our senses into visual and presenting them to the viewer in the form of a picture. It is not enough to look into sound and touch. A good deal of work about this in our general introduction.

Diringer, David, The Alphabet, 2 vols. The history of writing, Philosophical Library (1948) New York

Diringer, David, The Hand-Book of the Book, London: Hutchinson's Scientific Publications (1953)

Eisenstein, Sergei, Film Form and Film Sense, Meridian Books (MC-10)

Eliade, Mircea, The Sacred and the Profane, N.Y.: Harcourt Brace (1959)

This is a study of concepts of space and time in archaic cultures as contrasted with modern cultures. The paradox is that electronic man increasingly shares the outlook in attitudes to space and time of pre-literate man.

Friedenberg, E.Z., The Vanishing Adolescent, Boston: Beacon Press (1960)

Galatt, Roland, The Fabulous Language, Philadelphia and N.Y.: J. B. Lippincott Co. (1955)

Giedion, Siegfried, Mechanization Takes Command, Oxford University Press (1948)

"The new tradition" of which Giedion speaks concerns the various developments in design which have resulted from electronic means of moving information.

Giedion, Siegfried, Space, Time and Architecture: the growth of a new tradition, Cambridge: Harvard University Press (1943)

Gombrich, E. H., Art and Illusion, (Bollington Series 35) N.Y.: Pantheon Books Inc. (1960)

Valuable to the student of media because of the interplay of the arts and the senses (synesthesia) which it takes for granted. "The painter can accomplish his task only by giving tactile values to retinal impressions". (p16) This remark of Gombrich has the greatest interest for students of television and movie images.

Corbett, F. Lewis, Broadcasting in America, New York: Anchor Books (1954)

Hall, Edward T., The Silent Language, New York: Doubleday (1956)
The book is a study of the non-verbal communication of the culture of the Indians of the Amazon. It is a study of analyzing culture as behavior.

Hughes, Robert, Film: Book 1, New York: Doubleday (1955)
A fine collection of text and illustrative comments on the film medium.

Huizinga, Johan, Homo Ludens: A Study of the Play Element in Culture, Boston: Beacon Press (1955)

The Waning of the Middle Ages (Anchor A 92) N.Y.: Doubleday (1957)

The Waning of the Middle Ages is invaluable as a study of a nearly lost culture in transition to a printed one. Homo Ludens on the other hand is representative of our own intensely literate culture in search of pre-literate values.

Innis, H.A., The Bias of Communication, Oxford University Press (1951)

Empire and Communication, Oxford University Press (1950)

Ivins, Wm. M. (Jr.) Prints and Visual Communication, London: Routledge and Kegan Paul (1953)

This is surely one of the great books of our very great time. The print being the lowest of definitions in informational terms, it has a great deal in common with the television image.

Knight, Arthur, The Liveliest Age (SD 263) N.Y.: Mentor Books (1957)

Lanham, Paul F. and Stanton, Mark N., editors, Communications Research 1940-1949 N.Y.: Harper & Brothers (1949)

Lowenthal, Leo, Literature and the Image of Man, Boston: Beacon Press (1957)
This is a study of the interaction of forms.

Meier, Richard "Information, Resources Use, and Economic Growth," paper read at the 1950 conference on Natural Resources and Economic Growth at Ann Arbor, Michigan.

Humford Lewis, All of Mr. Humford's books are helpful in understanding media. He is an organicist skilled in observing the impact of tick-tock time upon architectural design.

Book 1000

Butler, R. C. (1957) New York: Harper

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Butler is one of the greatest figures of the century. He was one of the first to discover languages as media and to enable others to discover media as languages.

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Butler, R. C. (1957) New York: Harper

These experiments include consideration of the interrelation between touch and hearing. The student of media is increasingly faced with the problem of the relation between one sense and another.

Butler, R. C. (1957) New York: Harper